

Seventh Edition

HANDBOOK OF  
CHILD  
PSYCHOLOGY AND  
DEVELOPMENTAL  
SCIENCE

VOLUME 4

Ecological Settings  
and Processes

Volume Editors

Marc H. Bornstein  
Tama Leventhal

Editor-in-Chief

Richard M. Lerner

WILEY



**HANDBOOK OF CHILD PSYCHOLOGY  
AND DEVELOPMENTAL SCIENCE**





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## **Volume 4** *Ecological Settings and Processes*

*Volume Editors*

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*Editor-in-Chief*

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**WILEY**

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# Foreword to the *Handbook of Child Psychology and Developmental Science*, Seventh Edition

WILLIAM DAMON

## THE *HANDBOOK*'S DEVELOPING TRADITION

Development is one of life's optimistic ideas. It implies not just change but improvement, progress, forward movement, and some sense of positive direction. What constitutes improvement in any human capacity is an open, important, and fascinating question requiring astute theoretical analysis and sound empirical study. So, too, are questions of what accounts for improvement; what enhances it; and what prevents it when it fails to occur. One of the landmark achievements of this edition of the *Handbook of Child Psychology and Developmental Science* is that a full selection of top scholars in the field of human development have offered us state-of-the-science answers to these essential questions.

Compounding the interest of this edition, the concept of development applies to scholarly fields as well as to individuals, and the *Handbook*'s distinguished history, from its inception more than 80 years ago to the present edition, richly reveals the development of a field. Within the field of human development, the *Handbook* has had a long and notable tradition as the field's leading beacon, organizer, and encyclopedia of what's known. This latest *Handbook* edition, overflowing with insights and information that go well beyond the scientific knowledge available in previous editions, is proof of the substantial progress made by the field of human development during its still-short (by scholarly standards) history.

Indeed, the history of developmental science has been inextricably intertwined with the history of the *Handbook*. Like many influential encyclopedias, the *Handbook* influences the field it reports on. Scholars—especially younger ones—look to it to guide their own work. It serves as an

indicator and as a generator, a pool of received findings, and a source for generating new insight.

It is impossible to imagine what the field would look like if Carl Murchison had not assembled a ground-breaking collection of essays on the then-almost-unknown topic of child study in his first *Handbook of Child Psychology*. That was 1931, at the dawn of a scholarly history that, like every developmental narrative, has proceeded with a combination of continuity and change. What does this history tell us about where the field of developmental science has been, what it has learned, and where it is going? What does it tell us about what's changed and what has remained the same in the questions that have been asked, in the methods used, and in the theoretical ideas that have been advanced to understand human development?

## The First Two Editions

Carl Murchison was a star scholar/impresario who edited the *Psychological Register*, founded important psychological journals, and wrote books on social psychology, politics, and the criminal mind. He compiled an assortment of handbooks, psychology texts, and autobiographies of renowned psychologists, and even ventured a book on psychic phenomena (Sir Arthur Conan Doyle and Harry Houdini were among the contributors). Murchison's initial *Handbook of Child Psychology* was published by a small university press (Clark University) in 1931, when the field itself was still in its infancy. Murchison wrote:

Experimental psychology has had a much older scientific and academic status [than child psychology], but at the present time it is probable that much less money is being spent for pure

research in the field of experimental psychology than is being spent in the field of child psychology. In spite of this obvious fact, many experimental psychologists continue to look upon the field of child psychology as a proper field of research for women and for men whose experimental masculinity is not of the maximum. This attitude of patronage is based almost entirely upon a blissful ignorance of what is going on in the tremendously virile field of child behavior. (Murchison, 1931, p. ix)

Murchison's masculine allusion is from another era; it might supply good material for a social history of gender stereotyping. That aside, Murchison was prescient in the task that he undertook and the way that he went about it. At the time this passage was written, developmental psychology was known only in Europe and in a few forward-looking U.S. labs and universities. Nevertheless, Murchison predicted the field's impending ascent: "The time is not far distant, if it is not already here, when nearly all competent psychologists will recognize that one-half of the whole field of psychology is involved in the problem of how the infant becomes an adult psychologically" (Murchison, 1931, p. x).

For this first 1931 *Handbook*, Murchison looked to Europe and to a handful of American research centers for child study—most prominently, Iowa, Minnesota, University of California at Berkeley, Columbia, Stanford, Yale, and Clark—many of which were at the time called *field stations*. Murchison's Europeans included a young "genetic epistemologist" named Jean Piaget, who, in an essay on "Children's Philosophies," cited data from his interviews with 60 Genevan children between the ages of 4 and 12 years. Piaget's chapter would provide U.S. readers with an introduction to his soon-to-be seminal research program on children's conceptions of the world. Another European, Charlotte Bühler, wrote a chapter on young children's social behavior. In her chapter, which still is fresh today, Bühler described intricate play and communication patterns among toddlers—patterns that developmental scientists would not rediscover until the late 1970s. Bühler also anticipated critiques of Piaget that were to be again launched during the sociolinguistics heyday of the 1970s:

Piaget, in his studies on children's talk and reasoning, emphasizes that their talk is much more egocentric than social . . . that children from three to seven years accompany all their manipulations with talk which actually is not so much intercourse as monologue . . . [but] the special relationship of the child to each of the different members of the household is distinctly reflected in the respective conversations. (Bühler, 1931, p. 138)

Other Europeans include Anna Freud, who wrote on "The Psychoanalysis of the Child," and Kurt Lewin, who wrote on "Environmental Forces in Child Behavior and Development"—both would gain worldwide renown in coming years.

The Americans that Murchison chose were equally notable. Arnold Gesell wrote a nativistic account of his twin studies—an enterprise that remains familiar to us today—and Stanford's Louis Terman wrote a comprehensive account of everything known about the "gifted child." Harold Jones described the developmental effects of birth order, Mary Cover Jones wrote about children's emotions, Florence Goodenough wrote about children's drawings, and Dorothea McCarthy wrote about language development. Vernon Jones's chapter on "children's morals" focused on the growth of *character*, a notion that was to become mostly lost to the field during the cognitive-developmental revolution, but that has reemerged in the past decade as a primary concern in the study of moral development.

Murchison's vision of child psychology included an examination of cultural differences as well. His *Handbook* presented to the scholarly world a young anthropologist named Margaret Mead, just back from her tours of Samoa and New Guinea. In this early essay, Mead wrote that her motivation in traveling to the South Seas was to discredit the claims that Piaget, Levy-Bruhl, and other "structuralists" had made regarding what they called *animism* in young children's thinking. (Interestingly, about a third of Piaget's chapter in the same volume was dedicated to showing how Genevan children took years to outgrow their animism.) Mead reported data that she called "amazing": "In not one of the 32,000 drawings (by young 'primitive' children) was there a single case of personalization of animals, material phenomena, or inanimate objects" (Mead, 1931, p. 400). Mead parlayed these data into a tough-minded critique of Western psychology's ethnocentrism, making the point that animism and other beliefs are more likely to be culturally induced than intrinsic to early cognitive development. This is hardly an unfamiliar theme in contemporary psychology. Mead offered a research guide for developmental field workers in strange cultures, complete with methodological and practical advice, such as the following: (1) translate questions into native linguistic categories; (2) do not do controlled experiments; (3) do not try to do research that requires knowing the ages of subjects, which are usually unknowable; and (4) live next door to the children whom you are studying.

Despite the imposing roster of authors that Murchison had assembled for this original *Handbook of Child*

*Psychology*, his achievement did not satisfy him for long. Barely 2 years later, Murchison put out a second edition, of which he wrote: “Within a period of slightly more than 2 years, this first revision bears scarcely any resemblance to the original *Handbook of Child Psychology*. This is due chiefly to the great expansion in the field during the past 3 years and partly to the improved insight of the editor” (Murchison, 1933, p. vii). The tradition that Murchison had brought to life was already developing.

Murchison saw fit to provide the following warning in his second edition: “There has been no attempt to simplify, condense, or to appeal to the immature mind. This volume is prepared specifically for the scholar, and its form is for his maximum convenience” (Murchison, 1933, p. vii). It is clear that Murchison, despite his impresario urges, was willing to sacrifice accessibility and textbook-level sales for scientific value in this instance.

Murchison exaggerated when he wrote that his second edition bore little resemblance to the first. Almost half of the chapters were virtually the same, with minor additions and updating. (For the record, though, despite Murchison’s continued use of masculine phraseology, 10 of the 24 authors in the second edition were women.) Some of the authors whose original chapters were dropped were asked to write about new topics. So, for example, Goodenough wrote about mental testing rather than about children’s drawings, and Gesell wrote a general chapter on maturational theory that went well beyond his own twin studies.

But Murchison also made certain abrupt changes. He dropped Anna Freud entirely, prompting the marginalization of psychoanalysis within U.S. academic psychology. Leonard Carmichael, later to play a pivotal role in the *Handbook* tradition, made his appearance as author of a major chapter (by far, the longest in the book) on prenatal and perinatal growth. Three other physiologically oriented chapters were added as well: one on neonatal motor behavior, one on visual–manual functions during the first 2 years of life, and one on physiological “appetites” such as hunger, rest, and sex. Combined with the Goodenough and Gesell shifts in focus, these additions gave the 1933 *Handbook* a more biological thrust, in keeping with Murchison’s long-standing desire to display the hard-science backbone of the emerging field.

### The Early Wiley Editions

Leonard Carmichael was president of Tufts University when he organized Wiley’s first edition of the *Handbook*. The switch from a university press to the long-established

commercial firm of John Wiley & Sons was commensurate with Carmichael’s well-known ambition; and indeed Carmichael’s effort was to become influential beyond anything that Murchison might have anticipated. (The switch to Wiley meant that what was to become known as Wiley’s first edition was actually the *Handbook*’s third edition—and that what we now see as the seventh edition is really the *Handbook*’s ninth.) Carmichael renamed the volume the *Manual of Child Psychology*, in keeping with Carmichael’s intention of producing an “advanced scientific manual to bridge the gap between the excellent and varied elementary textbooks in this field and the scientific periodical literature” (Carmichael, 1946, p. vi).

Despite the small title change, there was significant continuity between the Murchison and Carmichael’s editions. Carmichael acknowledged this in the prefaces to both of his editions, the 1946 and 1954 *Manuals*:

Both as editor of the *Manual* and as the author of a special chapter, the writer is indebted. . . . [for] extensive excerpts and the use of other materials previously published in the *Handbook of Child Psychology, Revised Edition*. (Carmichael, 1946, p. vi)

Both the *Handbook of Child Psychology* and the *Handbook of Child Psychology, Revised Edition*, were edited by Dr. Carl Murchison. I wish to express here my profound appreciation for the pioneer work done by Dr. Murchison in producing these handbooks and other advanced books in psychology. The *Manual* owes much in spirit and content to the foresight and editorial skill of Dr. Murchison. (Carmichael, 1954, p. v)

The first quote comes from Carmichael’s preface to the 1946 edition, the second from his preface to the 1954 edition. We shall never know why Carmichael waited until the 1954 edition to add the personal tribute to Carl Murchison. Perhaps a careless typist dropped the laudatory passage from a handwritten version of the 1946 preface and its omission escaped Carmichael’s notice. Or perhaps 8 years of further development increased Carmichael’s generosity of spirit. It is also possible that Murchison or his family complained. In any case, Carmichael always acknowledged the roots of his *Manual*, if not always their original editor.

Leonard Carmichael took his 1946 *Manual* in the same direction established by Murchison back in 1931 and 1933. First, Carmichael appropriated five Murchison chapters on biological or experimental topics such as physiological growth, scientific methods, and mental testing. Second, he added three new biologically oriented chapters on animal infancy, on physical growth, and on motor and behavioral maturation (a tour de force by Myrtal McGraw that instantly made Gesell’s chapter in the same volume



obsolete). Third, he commissioned Wayne Dennis to write an adolescence chapter that focused exclusively on physiological changes associated with puberty. Fourth, Carmichael dropped Piaget and Bühler, who, like Anna Freud years earlier, were becoming out of step with then-current experimental trends in U.S. psychology.

The five Murchison chapters on social and cultural influences in development were the ones Carmichael retained: two chapters on environmental forces on the child (by Kurt Lewin and by Harold Jones), Dorothea McCarthy's chapter on children's language, Vernon Jones's chapter on children's morality (now entitled "Character Development—An Objective Approach"), and Margaret Mead's chapter on "primitive" children (now enhanced by several spectacular photos of mothers and children from exotic cultures around the world). Carmichael also stuck with three other psychologically oriented Murchison topics (emotional development, gifted children, and sex differences), but he selected new authors to cover them.

Carmichael's second and final *Manual* in 1954 was very close in structure and content to his 1946 *Manual*. Carmichael again retained the heart of Murchison's original vision, many of Murchison's original authors and chapter topics, and some of the same material that dated all the way back to the 1931 *Handbook*. Not surprisingly, the chapters that were closest to Carmichael's own interests received the most significant updating. As Murchison had done, Carmichael leaned toward the biological and physiological whenever possible. He clearly favored experimental treatments of psychological processes. Yet Carmichael still retained the social, cultural, and psychological analyses by Lewin, Mead, McCarthy, Terman, Harold Jones, and Vernon Jones, even going so far as to add a new chapter on social development by Harold and Gladys Anderson and a new chapter on emotional development by Arthur Jersild.

In 1946, when Carmichael had finished his first *Manual*, he had complained that "this book has been a difficult and expensive one to produce, especially under wartime conditions" (Carmichael, 1946, p. vii). But the project had been well worth the effort. The *Manual* quickly became the bible of graduate training and scholarly work in the field, available virtually everywhere that human development was studied. Eight years later, now head of the Smithsonian Institution, Carmichael wrote, in the preface to his 1954 edition: "The favorable reception that the first edition received not only in America but all over the world is indicative of the growing importance of the study of the phenomena of the growth and development of the child" (Carmichael, 1954, p. vii).

The Murchison and Carmichael volumes make fascinating reading, even today. The perennial themes of the field were always there: the nature/nurture debate; the generalizations of universalists opposed by the particularizations of contextualists; the alternating emphases on continuities and discontinuities during ontogenesis; and the standard categories of maturation, learning, locomotor activity, perception, cognition, language, emotion, conduct, morality, and culture—all separated for the sake of analysis, yet, as authors throughout each of the volumes acknowledged, all somehow joined in the dynamic mix of human development.

These things have not changed. Yet much in the early handbooks/manuals is now irrevocably dated. Long lists of children's dietary preferences, sleeping patterns, elimination habits, toys, and somatic types look quaint and pointless through today's lenses. The chapters on children's thought and language were done prior to the great contemporary breakthroughs in neurology and brain/behavior research, and they show it. The chapters on social and emotional development were ignorant of the processes of social influence and self-regulation that soon would be revealed through attribution research and other studies in social psychology. Terms such as *cognitive neuroscience*, *neuronal networks*, *behavior genetics*, *social cognition*, *dynamical systems*, *information processing*, and *developmental psychopathology* were unknown. Margaret Mead's rendition of the primitive child stands as a weak straw in comparison to the wealth of cross-cultural knowledge available in today's "cultural psychology."

Most tellingly, the assortments of odd facts and normative trends were tied together by very little theory throughout the Carmichael chapters. It was as if, in the exhilaration of discovery at the frontiers of a new field, all the facts looked interesting in and of themselves. That is what makes so much of the material seem odd and arbitrary. It is hard to know what to make of the lists of facts, where to place them, which ones were worth keeping track of and which ones are expendable. Not surprisingly, the bulk of the data presented in the Carmichael manuals seems not only outdated by today's standards but, worse, irrelevant.

Carmichael's second and final *Manual* had a long life: Not until 1970 did Wiley bring out a third edition. Carmichael was retired by then, but he still had a keen interest in the book. At his insistence, his own name became part of the title of Wiley's third edition: The edition was called, improbably, *Carmichael's Manual of Child Psychology*, even though it had a new editor and an entirely new cast of authors and advisors.



## Mussen's Transformation

Paul Mussen was editor of the 1970 edition; once again the project flourished. Now a two-volume set, the 1970 third edition swept the social sciences, generating widespread interest in developmental psychology and its related disciplines. Rarely had a scholarly compendium become both so dominant in its own field and so familiar in related disciplines. The volumes became essential sources for graduate students and advanced scholars alike. Publishers referred to Mussen's 1970 *Carmichael's Manual* as the standard against which other scientific handbooks were compared.

By 1970, the importance of theory for understanding human development had become apparent. Looking back on Carmichael's last *Manual*, Mussen wrote: "The 1954 edition of this *Manual* had only one theoretical chapter, and that was concerned with Lewinian theory which, so far as we can see, has not had a significant lasting impact on developmental psychology" (Mussen, 1970, p. x). The intervening years had seen a turning away from the norm of psychological research once fondly referred to as "dust-bowl empiricism."

The 1970 handbook—still called, as noted above, *Carmichael's Manual*—had an entirely new look. The two-volume set carried only one chapter from the earlier books, Carmichael's updated version of his own long chapter on the "Onset and Early Development of Behavior," which had made its appearance under a different title way back in Murchison's 1933 edition. Otherwise, as Mussen wrote in his preface, "It should be clear from the outset . . . that the present volumes are not, in any sense, a *revision* of the earlier editions; this is a completely new *Manual*" (Mussen, 1970, p. x).

And it was. In comparison to Carmichael's last edition 16 years earlier, the scope, variety, and theoretical depth of the Mussen volumes were astonishing. The field had blossomed, and the new *Manual* showcased many of the new bouquets that were being produced. The biological perspective was still strong, grounded by chapters on physical growth (by J. M. Tanner) and physiological development (by Dorothy Eichorn), and by Carmichael's revised chapter (now made more elegant by some excerpts from Greek philosophy and modern poetry). But two other cousins of biology also were represented, in an ethological chapter by Eckhard Hess, and a behavior genetics chapter by Gerald McClearn. These chapters were to define the major directions of biological research in the field for at least the next three decades.

As for theory, Mussen's *Handbook* was thoroughly permeated with it. Much of the theorizing was organized around the approaches that, in 1970, were known as the "three grand systems": (1) Piaget's cognitive-developmentalism, (2) psychoanalysis, and (3) learning theory. Piaget was given the most extensive treatment. He himself reappeared in this *Manual*, authoring a comprehensive (some say definitive) statement of his own theory, which now bore little resemblance to his 1931/1933 catalog of children's intriguing verbal expressions. In addition, chapters by John Flavell, by David Berlyne, by Martin Hoffman, and by William Kessen, Marshall Haith, and Philip Salapatek, all gave major treatments to one or another aspect of Piaget's body of work.

Several other theoretical approaches were represented in the 1970 *Manual* as well. Herbert and Ann Pick explicated Gibsonian theory in a chapter on sensation and perception, Jonas Langer wrote a chapter on Werner's organismic theory, David McNeill wrote a Chomskian account of language development, and Robert LeVine wrote an early version of what was to become "culture theory."

With its increased emphasis on theory, the 1970 *Manual* explored in depth a matter that had been all but neglected in the *Manual's* previous versions: the mechanisms of change that could account for, to use Murchison's old phrase, "the problem of how the infant becomes an adult psychologically." In the process, old questions such as the relative importance of nature versus nurture were revisited, but with far more sophisticated conceptual and methodological tools.

Beyond theory building, the 1970 *Manual* addressed an array of new topics and featured new contributors: peer interaction (Willard Hartup), attachment (Eleanor Maccoby and John Masters), aggression (Seymour Feshback), individual differences (Jerome Kagan and Nathan Kogan), and creativity (Michael Wallach). All of these areas of interest are still very much with us.

Wiley's fourth edition, published in 1983, was redesignated to become once again the *Handbook of Child Psychology*. By then, Carmichael had passed away. The set of books, now expanded to four volumes, became widely referred to in the field as "the Mussen handbook."

If the 1970 *Manual* reflected a blossoming of the field's plantings, the 1983 *Handbook* reflected a field whose ground cover had spread beyond any boundaries that could have been previously anticipated. New growth had sprouted in literally dozens of separate locations. A French garden, with its overarching designs and tidy compartments, had turned into an English garden, unruly but often glorious in

its profusion. Mussen's two-volume *Carmichael's Manual* had now become the four-volume *Mussen Handbook*, with a page-count increase that came close to tripling the 1970 edition.

The grand old theories were breaking down. Piaget was still represented in 1983 by his 1970 piece, but his influence was on the wane throughout other chapters. Learning theory and psychoanalysis were scarcely mentioned. Yet the early theorizing had left its mark, in vestiges that were apparent in new approaches, and in the evident conceptual sophistication with which authors treated their material. There was no return to dust-bowl empiricism. Instead, a variety of classical and innovative ideas were coexisting: ethology, neurobiology, information processing, attribution theory, cultural approaches, communications theory, behavioral genetics, sensory-perception models, psycholinguistics, sociolinguistics, discontinuous stage theories, and continuous memory theories all took their places, with none quite on center stage. Research topics now ranged from children's play to brain lateralization, from children's family life to the influences of school, day care, and disadvantageous risk factors. There also was coverage of the burgeoning attempts to use developmental theory as a basis for clinical and educational interventions. The interventions usually were described at the end of chapters that had discussed the research relevant to the particular intervention efforts, rather than in whole chapters dedicated specifically to issues of practice.

### The Fifth and Sixth Editions

There was a long hiatus between the fourth edition in 1983 and the fifth edition, which was not to appear until 1998. The fifth edition fell to me to organize, and this was not at my own initiative. Two John Wiley editors—Herb Reich, a legendary figure in academic publishing, and Kelly Franklin, an up-and-coming innovative star—approached me about reviving the project, which they correctly believed had a vital tradition behind it, but that they also believed was in danger of falling by the wayside. I had been editing the Jossey-Bass series that I founded, *New Directions for Child and Adolescent Development*, and the two Wiley editors believed that if we could impart a “new directions” tone to a new *Handbook* edition, the project could regain its past appeal. I agreed, and I proposed that this next edition be organized in an intuitively simple four-volume design: a theory volume, a volume on cognitive and linguistic development, a volume on social and personality development, and a volume on child

psychology in practice. When Wiley accepted my proposal, my first action as general editor was to invite an incredibly talented group of volume editors—Nancy Eisenberg, Deanna Kuhn, Richard Lerner, Anne Renninger, Robert Siegler, and Irving Sigel—to collaborate on the selection and editing of chapters. The edition was to become the result of a partnership among all the editors; and the same team collaborated again to produce the sixth edition of the *Handbook* in 2006, with Richard Lerner assuming an added role as my co-editor-in-chief. The 2006 edition closely followed the model of the 1998 edition, with some important additions, such as chapters on the positive youth development approach, on artistic development, and on religiosity and faith in human development.

Our team approached the 1998 and 2006 editions with the same purpose that Murchison, Carmichael, and Mussen before us had shared: “to provide,” as Mussen wrote, “a comprehensive and accurate picture of the current state of knowledge—the major systematic thinking and research—in the most important research areas of the psychology of human development” (Mussen, 1983, p. vii). We assumed that the *Handbook* should be aimed “specifically for the scholar,” as Murchison declared, and that it should have the character of an “advanced text,” as Carmichael defined it. We expected that our readership would be interdisciplinary, given the tendency of scholars in human development to do work across the fields of psychology, cognitive science, neuroscience, history, linguistics, sociology, anthropology, education, and psychiatry. In Volume 4, we hoped that research-oriented practitioners would be among the scholars for whom the *Handbook* had value.

By the time of the 1998 and 2006 editions of the *Handbook*, powerful theoretical models and approaches—not quite unified theories like the “three grand systems” that had marked earlier editions—were again organizing much of the field's research. There was great variety in these models and approaches, and each was drawing together significant clusters of work. Among the powerful models and approaches prominent in the 1998 and 2006 *Handbooks* were the dynamic system theories, life-span and life-course approaches, cognitive science and neural models, the behavior genetics approach, person-context interaction theories, action theories, culture theory, ecological models, and neo-Piagetian and Vygotskian models. Although some of these models and approaches had been in the making for some time, by the end of the 20th century they had fully come into their own: researchers were drawing on them more directly, taking their implied assumptions

and hypotheses seriously, using them with specificity and control, and exploiting all of their implications for practice.

### The Present

The seventh Wiley edition of the *Handbook* continues and strengthens the trends toward specific theoretical analyses of multiple developmental processes, even highlighting this focus by including the term “processes” in three of the four volume’s titles, a designation new to the *Handbook*’s history. The volumes present a rich mix of classic and contemporary theoretical perspectives, but I believe it is fair to say that the dominant views throughout are marked by an emphasis on the dynamic interplay of all relational developmental systems that co-act across the life span, incorporating the range of biological, perceptual, cognitive, linguistic, emotional, social, cultural, and ecological levels of analysis. At the same time, the chapters together consider a vast array of topics and problems, ranging from sexuality and religiosity to law, medicine, war, poverty, and education. The emerging world of digital experience is also given a fuller treatment than in any previous *Handbook* edition, commensurate with our present-day technological revolution. All this gives this seventh edition of the *Handbook* a timely feel.

The present *Handbook*’s combination of theoretical and methodological sophistication and topical timeliness resolves an old tension evident in the *Handbook*’s prior cycling between theoretical-methodological and problem-centered approaches. My impression is that, rather than leaning in one direction or the other, this *Handbook* manages to be *both* more theoretical-methodological *and* more topical than the previous editions. As a developmental phenomenon, this puts the *Handbook* in a class of organisms that develop towards adaptive complexity rather than towards one or another contrasting polar dimension.

I wonder what Carl Murchison would think of the grown-up child that he spawned before the field of human development had become a mainstream endeavor in research and teaching around the world. Murchison’s idiosyncratic assortment of fascinating studies bears little resemblance to the imposing compendium of solidly grounded knowledge that we have in the present *Handbook*. Yet each step along the 83-year way followed directly from what had gone before, with only occasional departures or additions that may have seemed more like gradual revisions at the time. Over the long haul, the change in the *Handbook* has been dramatic, but the change process itself has been marked by substantial continuities. If Murchison were to come back to life today, he may be astonished by the size and reach of his child, but I believe he would recognize it—and proudly so.

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2014

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## Preface

Across its editions, the title of this handbook has changed, now, five times: *A Handbook of Child Psychology*; *Manual of Child Psychology*; *Carmichael's Manual of Child Psychology*; *Handbook of Child Psychology*; and *Handbook of Child Psychology and Developmental Science*. As well, the field of scholarship represented in the handbook has also been labeled differently: child psychology, child development, developmental psychology, and, today, developmental science. The rationales for the use of these labels involve historically changing ontological and epistemological assumptions.

During the latter years of the 19th century and for much of the past two thirds of the 20th century, and perhaps especially in the United States and Western Europe, the study of human development was a visible subfield of psychology (see Cairns & Cairns, 2006, for a review; see also Damon, in the Foreword to this edition of the *Handbook*). In this literature, and its antecedents in philosophy (see Baltes, 1983; Overton, 2006 for reviews), development was envisioned to be a life-span phenomenon (e.g., Erikson, 1959; Hall, 1904, 1922). However, the majority of the scholarship about human development in the United States and Western Europe was focused on the early years of life (infancy and childhood) (e.g., Binet & Simon, 1905a, 1905b; Gesell, 1929; Piaget, 1923; Preyer, 1882; Terman, 1925).

As a consequence, across this historical period, child psychology emerged as a specific subarea of psychology, spurred on by the research of scientists studying this age period; by the founding of several university centers and institutes devoted to the study of children (e.g., in Iowa, involving scholars such as Boyd R. McCandless; and in Minnesota, involving scholars such as Dale B. Harris); and by the work in the field of home economics, which was focused on children (and families), that was occurring

within land-grant universities in the United States (Cairns & Cairns, 2006; Lerner & Simon, 1998). At the same time, many of the contributors to child psychology also created a purportedly multidisciplinary instantiation of scholarship devoted to the study of children, that is, child *development*. In 1933, the Society for Research in Child Development (SRCD) was founded to promote such a multidisciplinary approach to the study of children (and to the application of child development research) but, in actuality, SRCD was from its outset and remains today dominated by scholars whose training is in psychology. It is not surprising, then, that, whether labeled child psychology or child development, the study of the early portion of the life span was approached in very similar ways by scholars studying children.

At its inception, the child development (or child psychology) field was framed by Cartesian-split conceptions of change across ontogeny and by reductionist accounts of the bases of human development (Overton, 2013a, 2013b; Overton & Müller, 2013). The core conceptual issues of child development were the nature-nurture, the continuity-discontinuity, and the stability-instability controversies (Lerner, 2002), and “solutions” to these debates involved, for instance, reducing development to being a phenomenon explained by either nature variables (genes or maturation; e.g., Hamburger, 1957) or by operant or respondent stimulus-response connections (e.g., Bijou & Baer, 1961). This split, reductionist ontology about development meant that the epistemological route to learning about the basis of development was to identify the essential (nature *or* nurture) explanatory variable(s). Accordingly, the study of development was also marked by variable-centered analyses, as exemplified by the tables of contents of the editions of this *Handbook* published during this period (e.g., Carmichael, 1946, 1954; Murchison,



1931, 1933; Mussen, 1970, 1983; see also Damon, in the Foreword to this edition), as well as by the tables of contents of other major compendiums published during this period (e.g., Reese & Lipsitt, 1970; Stevenson, 1963).

However, as early as 1970, Mussen, the editor of the third edition of the *Handbook* published by Wiley, pointed to the potential meaning of a growing interest among some scientists to move away from a reductionist approach, involving descriptions of the variables purportedly accounting for ontogenetic structure and function, and toward an approach that viewed development as involving interrelations among variables (from multiple levels of organization). Mussen (1970) said that “the major contemporary empirical and theoretical emphases in the field of developmental psychology . . . seem to be on *explanations* of the psychological changes that occur, the mechanisms and processes accounting for growth and development” (p. vii). By pointing to the interest in change processes, Mussen was implying that we needed something more to explain the process of development, unless we believed that nature or nurture variables explained themselves in structure or function.

That “something more” was already emerging within the study of development—for instance, at a series of conferences held at the University of West Virginia in the late 1960s and early 1970s about the nature and implications of a life-span view of human development (e.g., Baltes & Schaie, 1974; Nesselroade & Reese, 1973; Schaie, 1970). These West Virginia University conferences, the edited books that derived from them, and the associated articles published in both theoretically oriented journals (e.g., *Human Development*, *Developmental Review*) and empirically oriented journals (e.g., *Child Development*, *Developmental Psychology*, *International Journal of Behavioral Development*, and *Journal of Research on Adolescence*) discussed the philosophical, theoretical, and methodological problems associated with split/reductionist accounts of development. In addition, they introduced ideas about the potential for plasticity (i.e., the potential for systematic change) in development across life, and pointed to the role of potentially mutually influential relations between individuals and their normative age- and history-graded experiences and, as well, their nonnormative experiences, in instantiating this plasticity. Finally, they underscored the fundamental necessity of studying intraindividual changes (and interindividual differences in intraindividual changes) involved in these individual-context relations in order to describe, explain, and optimize the course of human development. These ideas would act synergistically

with growing scholarship in Europe that provided theory and data fostering a “reversal” of focus for developmental inquiry—from variable-centered to person-centered approaches to human development (e.g., Magnusson, 1999). These ideas were also synergistic with work in sociology that demonstrated that the course of life was shaped by historical events that one encountered at particular times and in particular places (Elder, 1974).

When taken together, the dimensions of human development scholarship that crystallized and coalesced between the 1970s and 1990s pointed to the vacuity of split/reductionist models (and their attendant methodologies). In turn, these ideas underscored the importance of time and place, person–context relations, plasticity, and the need for a focus on longitudinal (change-sensitive) methods to study intraindividual change across life and, as well, the diverse life paths of these intraindividual changes. These ideas, when considered together, presented a major challenge to the then-dominant metatheoretical and theoretical ideas in the field. Indeed, the new ideas about human development that found an impetus at the West Virginia University conferences grew in influence across the field and together, across the last three decades of the 20th century, created a Kuhn-like (Kuhn, 1962) paradigm shift (Overton, 2013a, 2013b; Overton & Lerner, 2012).

The shift in conceptual and empirical foci attendant to this paradigm shift was multifaceted. As I noted, Mussen (1970) observed that the field had been primarily descriptive and normative (Mussen, 1970), with the norms usually generated by studying only a small portion of humanity (i.e., European American middle-class children in the main; Hagen, Paul, Gibb, & Wolters, 1990). In addition, the “paradigm” framing this research was as likely (if not more likely) to use cross-sectional research to study development as it was to employ longitudinal methods. The use of cross-sectional designs (and data analysis methods, e.g., R-technique analyses; e.g., see Cattell, 1966, and for more current versions of these ideas see Molenaar & Nesselroade, 2014; Nesselroade & Molenaar, 2010) was predicated on the assumption of the applicability of the ergodic theorem (e.g., Molenaar, 2007; Molenaar & Nesselroade, 2014). The ergodic theorem holds that data sets are marked by: (a) homogeneity across individuals in a three-dimensional matrix that involves persons, variables, and time; and (b) stationarity of individuals’ scores on variables across time (Molenaar, 2007).

In contrast, the approach to the study of human development that was evidenced by the life-span and life-course perspectives involved research that documented the

presence of systematic variation in trajectories of intraindividual change, both within and across people. As such, the assumptions of homogeneity and stationarity of the ergodic theorem were rejected and developmental scientists placed greater importance on not only person-centered research but, as well, change-sensitive methodologies for both descriptive and explanatory efforts (Molenaar, 2007, 2010). What was distinctive about this research, however, was that it was both derived from and promoted diverse attempts to create theoretical models of human development associated with an emergent, relational paradigm (Overton, 2013a, 2013b; Overton & Müller, 2013), a conception that focused on the individual and on the course of his or her trajectories of reciprocal bidirectional relations with the multiple levels of the ecology of human development (represented as individual  $\longleftrightarrow$  context relations). Examples were the bioecological model of Bronfenbrenner (e.g., 1979), the dialectical model of Riegel (e.g., 1975), the developmental contextual approach of Lerner (1982), the developmental systems concepts of Gottlieb (1997, 1998) and of Ford and Lerner (1992), the model of individual development proposed by Magnusson (1999), and the embodiment model presented by Overton (1994, 1997).

In short, these “strands” of theory merged in the 1970s, 1980s, and 1990s and shifted the predominant developmental “paradigm” away from reductionism, Cartesian-split conceptions, and methods predicated on ergodicity, and created a focus on models emphasizing the mutually influential relations between individuals and their contexts, on person  $\longleftrightarrow$  context relations (Cairns & Cairns, 2006; Lerner, 2006). Such models involved the belief that time and place matter in regard to shaping the course of life (Bronfenbrenner, 2005; Elder, 1998; Elder & Shanahan, 2006), and emphasized that the scientific study of human development needed to study both the individual and the diversity of people in order to understand human development.

In sum, the relational paradigm that framed conceptions of the bases of human development was associated with the generation of several, relational developmental systems models of human development (Lerner, 2006; Lerner & Overton, 2008; Overton, 2013a, 2013b; Overton & Müller, 2013), conceptions that were used to guide the study of individuals, contexts, and their dynamic interrelations across the life span. Table P.1 presents the defining features of such models.

This multilevel and multidisciplinary approach to studying human development was the basis of the view

that the field was best represented by the term developmental science. In turn, given this synergistic history of the links among theory, method, and research, it is not surprising that, at this writing, relational developmental systems theories are at the forefront of the study of human development (e.g., Lerner, 2012; Lerner & Benson, 2013a, 2013b; Overton & Lerner, 2012). Indeed, the fifth edition of the Wiley *Handbook* (Damon, 1998) had pointed to the growing prominence of such approaches to the study of human development and, in turn, the sixth edition (Damon & Lerner, 2006) noted that models derived from relational developmental systems thinking, and from a relational meta-model more generally, had become the predominant conceptual lens for the cutting-edge theory and methodological innovations guiding research in human development across the life span.

In the present seventh edition of the Wiley *Handbook*, this pathway of scholarly progression is continued. Key examples of relational developmental systems models are found across all four volumes of this seventh edition of the *Handbook*. Moreover, accompanying the use of these models are new methodologies to study individuals, to therefore capture the nonergodic character of human development and, as well, to study the developmental system within which individual  $\longleftrightarrow$  context relations are embedded. Examples of these methods are also a prominent contribution of chapters in this edition of the *Handbook*.

Another key feature of the chapters in this edition of the *Handbook* is the applied use of relational developmental systems theoretical models. Based on ideas about the relative plasticity of individual  $\longleftrightarrow$  context relations, this use of theory overcomes yet another traditional split within the study of human development—between theory-predicated explanations of human development and applications aimed at enhancing human development (Baltes, Reese, & Nesselroade, 1977; Lerner, 2002, 2012). For instance, to test explanations of developmental change, scholars need to institute or evaluate actions that are aimed at altering the bidirectional relations theoretically expected to produce changes in behavior and development. These actions must necessarily be embedded in the actual ecology of human development in order to have generalizability to the lived experiences of individuals (Lerner & Callina, 2014) and, as such, they constitute intervention (applied) research; at the same time, such research tests basic explanatory processes of human development. As such, in contemporary developmental science any splits between basic and applied research are regarded as anachronistic representations of the reductionist, Cartesian approaches of earlier eras.

**TABLE P.1 Defining features of the relational developmental systems paradigm****Relational Metatheory**

Predicated on a philosophical perspective that transcends Cartesian dualism and atomism, theories derived from the relational developmental systems paradigm are framed by a relational metatheory for human development. This focus includes an emphasis on process and a rejection of all splits between components of the ecology of human development (e.g., between nature- and nurture-based variables, between continuity and discontinuity, and between stability and instability). Holistic syntheses replace dichotomies, as well as reductionist partitions of the developing relational system, through the integration of three relational moments of analysis: the identity of opposites, the opposites of identity, and the syntheses of wholes. Deriving from the relational metatheory, relational developmental systems posit the organism as an inherently active, self-creating, self-organizing, and self-regulating nonlinear complex adaptive system, which develops through embodied activities and actions, as they co-act with a lived world of physical and sociocultural objects.

**The Integration of Levels of Organization**

Relational thinking, with the rejection of Cartesian splits, is associated with the idea that all levels of organization within the ecology of human development are integrated or fused. These levels range from the biological and physiological through the cultural and historical.

**Developmental Regulation Across Ontogeny Involves Mutually Influential Individual  $\leftrightarrow$  Context Relations**

As a consequence of the integration of levels, the regulation of development occurs through mutually influential connections among all levels of the developing relational system, ranging from genes and cell physiology through individual mental and behavioral functioning to society, culture, the designed and natural ecology, and, ultimately, history. These mutually influential relations may be represented generically as Level 1  $\leftrightarrow$  Level 2 (e.g., Family  $\leftrightarrow$  Community), and in the case of ontogeny may be represented as individual  $\leftrightarrow$  context.

**Integrated Actions, Individual  $\leftrightarrow$  Context Relations, Are the Basic Unit of Analysis Within Human Development**

The character of developmental regulation means that the integration of actions—of the individual on the context and of the multiple levels of the context on the individual (individual  $\leftrightarrow$  context)—constitute the fundamental unit of analysis in the study of the basic process of human development.

**Temporality and Plasticity in Human Development**

As a consequence of the fusion of the historical level of analysis—and therefore temporality—in the levels of organization comprising the ecology of human development, the developing relational system is characterized by the potential for systematic change, by plasticity. Observed trajectories of intraindividual change may vary across time and place as a consequence of such plasticity.

**Relative Plasticity**

Developmental regulation may both facilitate and constrain opportunities for change. Thus, change in individual  $\leftrightarrow$  context relations is not limitless, and the magnitude of plasticity (the probability of change in a developmental trajectory occurring in relation to variation in contextual conditions) may vary across the life span and history. Nevertheless, the potential for plasticity at both individual and contextual levels constitutes a fundamental strength of all human development.

**Intraindividual Change, Interindividual Differences in Intraindividual Change, and the Fundamental Substantive Significance of Diversity**

The combinations of variables across the integrated levels of organization within the developmental system that provide the basis of the developmental process will vary at least in part across individuals and groups. This diversity is systematic and lawfully produced by idiographic, group differential, and generic (nomothetic) phenomena. The range of interindividual differences in intraindividual change observed at any point in time is evidence of the plasticity of the developmental system, and gives the study of diversity fundamental substantive significance for the description, explanation, and optimization of human development.

**Interdisciplinarity and the Need for Change-Sensitive Methodologies**

The integrated levels of organization comprising the developmental system require collaborative analyses by scholars from multiple disciplines. Interdisciplinary knowledge is a central goal. The temporal embeddedness and resulting plasticity of the developing system requires that research designs, methods of observation and measurement, and procedures for data analysis be change- and process-sensitive and able to integrate trajectories of change at multiple levels of analysis.

**Optimism, the Application of Developmental Science, and the Promotion of Positive Human Development**

The potential for and instantiations of plasticity legitimate an optimistic and proactive search for characteristics of individuals and of their ecologies that, together, can be arrayed to promote positive human development across life. Through the application of developmental science in planned attempts (interventions) to enhance (e.g., through social policies or community-based programs) the character of humans' developmental trajectories, the promotion of positive human development may be achieved by aligning the strengths (operationalized as the potentials for positive change) of individuals and contexts.

*Source:* Based on Lerner (2006) and Overton (2013a, 2013b).

In short, the application of developmental science (optimization) is a co-equal partner with description and explanation within developmental science as it now exists. Once again, the chapters in this edition of the *Handbook* provide rich illustrations of the integrated foci of developmental

scholarship on the description, explanation, and optimization of human development across the life span.

Together, the metatheoretical, theoretical, methodological, and applied features of contemporary developmental science that are represented across the four volumes of this



seventh edition of the *Handbook* allow this reference work to continue its history of marking the best scholarship in our field and of specifying the key directions for scientific progress. These contributions of the *Handbook* emerge from the intellectual abilities and wisdom of the volume editors and the authors of the chapters involved in this edition. I am enormously indebted to Willis F. Overton and Peter C. M. Molenaar, editors of Volume 1, Lynn S. Liben and Ulrich Müller, editors of Volume 2, Michael E. Lamb, editor of Volume 3, and Marc H. Bornstein and Tama Leventhal, editors of Volume 4, for their broad and deeply erudite scholarship, vision, and leadership. Their knowledge and skills created and shaped the volumes they edited.

The volume editors and I are also profoundly grateful to the authors of the chapters in this edition. Their singular levels of expertise and mastery of their areas of scholarship are richly and compellingly conveyed in this edition. The work of these colleagues represents the best scholarship in developmental science, and we are deeply grateful for their truly field-defining contributions to this edition.

I wish to express particular gratitude to William Damon, for his thoughtful, illuminating, and generous Foreword to this edition of the *Handbook*. Professor Damon was the editor of the fifth and sixth editions of the *Handbook* and, as well, for five decades he has been a visionary intellectual leader of the field that we now term developmental science. He stands as a model of scholarly excellence, erudition, and wisdom, and I am deeply grateful to have his ideas frame the volumes in this edition.

In addition, as scholars contributing to reference works of the scope of the *Handbook* realize, their work cannot be crystallized, completed, or disseminated without the efforts of the professional editors and publishers who work with them. The editors and authors of the seventh edition have been exceedingly fortunate to have had superb support and, as well, collegial guidance, from our editors in the Institute for Applied Research in Youth Development at Tufts and at John Wiley & Sons.

Jarrett M. Lerner, the managing editor in the Institute at Tufts, was involved with the seventh edition since its inception. He has organized and advanced every facet of the editorial and production process. His professionalism, knowledge, organizational capacities, efficiency, commitment, and indefatigable, positive spirit were vital to the existence, and to any archival contributions, of this edition.

In addition, Patricia A. Rossi, the executive editor for psychology at Wiley, was a masterful and wise guide and catalyst for the seventh edition, again from its inception.

Her deep knowledge of the scholarly qualities that are required to produce a reference work that will set the standard of excellence for its field, and her enthusiasm and unflagging commitment to enabling editors and authors to attain this standard, were essential contributions to the development and completion of this edition. She and her colleagues at Wiley, who enacted a superbly organized, efficient, and invariantly high-quality production process, have enabled the scholarship of the authors and editors to be superbly presented to our readership.

Across the several years that I have worked on this edition of the *Handbook*, I have been blessed by having support, stimulation, and feedback from my colleagues in the Eliot-Pearson Department of Child Study and Human Development, and from my colleagues, staff, and students at the Institute for Applied Research in Youth Development, both at Tufts University. I am grateful for their inspiration and collaboration. I am also extremely fortunate to have had support for my scholarly work provided by the John Templeton Foundation, the Thrive Foundation for Youth, the Poses Family Foundation, the National 4-H Council, the Altria Group, Inc., the Bertelsmann Foundation, the National Science Foundation, the Gary and Joan Bergstrom family, and several individuals who have made private donations to the Institute to support its research. I thank them for their faith in me and for honoring me with their support. My family has been a vital resource of emotional and intellectual support—encouraging me when things seemed overwhelming and grounding me when, on rare occasions, things seemed to be going exceedingly well. My wife, Jacqueline Lerner, merits special recognition—as my life partner, as my chief scholarly collaborator, and my muse. I would have accomplished nothing in my career or my life without her.

Finally, the volume editors and I want to thank the colleagues and students who will read the chapters in this edition of the *Handbook* and who, we hope, will gain from the work presented across its four volumes. Many of these colleagues will find their contributions to developmental science represented in the pages of this edition. We thank them for these contributions. As well, we are grateful to them for another reason. Many of these colleagues will also be training the next generation of developmental scientists, young scholars whom we hope will be inspired by this edition of the *Handbook* to undertake scholarship that will make subsequent editions even better and more useful.

We wish these younger scientists well in this intellectual journey. As such, with the hope that their scientific

aspirations will be realized, we dedicate this seventh edition of the *Handbook of Child Psychology and Developmental Science* to them.

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Medford, Massachusetts  
January, 2014

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## Volume 4 Preface

*Ecological Settings and Processes*, Volume 4 in this seventh edition of the *Handbook of Child Psychology and Developmental Science*, takes as its starting point the understanding that children are embedded in a complex web of diverse social and physical contexts. In line with the other volumes in this *Handbook*, this volume's chapters are guided by a relational developmental systems perspective (see Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1). The chapters approach the study of ecological settings and processes by adhering to core principles of human development espoused by this perspective: children's environments are complex, multidimensional, and structurally organized; children actively contribute to their development; children and their environments are inextricably linked, and contributions of both child and environment are essential to explain or understand human development; children's development is multidetermined; change over time in the child, the environment, and relations between child and environment is normative; and, on account of the foregoing, development is probabilistic.

The chapters in Volume 4 are organized in a manner that generally conforms to the multiple, hierarchical levels of the bioecological model, beginning with near proximal contexts of children and moving through to distal contexts that influence children. Although not divided into formal sections, the chapters revolve around five spheres of influence on children's development. The first constitutes a broad overview of time and history, laying out the conceptual underpinnings and setting the stage for the rest. The ensuing substantive chapters add contemporary surveys of separate constituents of the relational developmental systems perspective in developmental science. The second group of chapters focuses on the immediate social ecology of children with their significant others, notably parents, families, and peers. The third part sets children

in their most common everyday institutional and group circumstances of childcare and school as well as activities, work, and media. The fourth section complements the third in setting children in their equally prevalent and more encompassing community and physical contexts of home and neighborhoods. The fifth section of this volume casts children and child development in even broader contexts of socioeconomic status, medicine, law, government, war and disaster, culture, and history. The final chapter overviews what precedes in terms of assessment and measurement.

By acknowledging the complexity of the bioecological landscapes of children's development, all of the chapters in Volume 4 share several other commonalities. They draw on knowledge from multiple disciplines and review research employing a large, diverse, and sophisticated set of methods. Doing so enables them to provide a strong foundation that will guide future research in their respective areas and, where relevant, advance evidence-based recommendations for policies and practices to improve children's lives.

We are grateful to the authors of Volume 4 for addressing the challenges inherent in studying the bioecological landscapes of children's development so successfully. Without their dedication, perseverance, and ingenuity, developmental science would not be as evolved as it is today, and the state of knowledge in the specific ecological settings and processes represented in this volume would be much poorer. Volume 4, and the *Handbook* as a whole, would not have cohered around its forward-looking unified conceptual framework without the intellectual leadership of our editor-in-chief, Richard Lerner. He was most ably assisted in this complex endeavor by Jarrett Lerner. We are indebted to both for helping us realize our shared vision for Volume 4 of this seminal and enduring *Handbook* in developmental science.

M. H. B.  
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**HANDBOOK OF CHILD PSYCHOLOGY  
AND DEVELOPMENTAL SCIENCE**



## CHAPTER 1

# Children in Bioecological Landscapes of Development

MARC H. BORNSTEIN and TAMA LEVENTHAL

**BIOECOLOGY AND DEVELOPMENT** 1  
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### BIOECOLOGY AND DEVELOPMENT

Children are embedded in a complex web of diverse social and physical contexts. At the time we organized Volume 4 in this seventh edition of the *Handbook of Child Psychology and Developmental Science*, the relational bioecological developmental systems perspective was the prevailing theoretical framework in our field (Bronfenbrenner & Morris, 2006; Lerner, 2006). Absent a paradigm shift in developmental science, we suspect that it will continue so. In consequence, the chapters in Volume 4 are guided by the relational developmental systems paradigm (see Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1), and we ordered them in a manner that generally conforms to the multiple levels of the bioecological model, beginning with the near proximal contexts in which children find themselves and moving through to distal contexts that influence children in equally compelling, if less immediately manifest, ways. The environmental structure that envelops the child can be viewed as hierarchical, with lower-level more proximal contexts nested within higher-level more distal contexts, all of which shape how children develop.

This volume of the *Handbook* is centrally concerned with the people, conditions, and events outside children that affect children and their development. To understand children's development it is both necessary and desirable to embrace all of these social and physical contexts. Contemporary developmental contextualist theories of human development share core principles that underpin this explanatory stance: The child's environment is complex, multidimensional, and structurally organized

into interlinked contexts; children actively contribute to their development; the child and the environment are inextricably linked, and contributions of both child and environment are essential to explain or understand development; the child's development is multidetermined; change over time in the child, the environment, and relations between child and environment is normative. Because of the foregoing principles, development is probabilistic.

In accord with these principles, bioecological theory defines *development* as a joint function of process, person, context, and time (Bronfenbrenner & Morris, 2006). Characteristics and qualities of the developing person, including, for example, age, gender, temperament, and intellect, interact with characteristics of the environment to influence the nature and structure of developmental outcomes. Developmental settings distinguish process and context. *Processes* refer to dynamic interactions that the developing person experiences. Development proceeds within a hierarchically organized, interlinked set of four nested contexts or systems. Each system has the potential to influence other systems. With respect to context, the microsystem encompasses patterns of activities, roles, and interpersonal relationships that the child experiences in face-to-face settings defined by specific physical and material parameters. At this most proximal and innermost context are patterns of interaction (proximal processes) between children and their immediate social milieus (e.g., parents, siblings, teachers) and physical environments (e.g., objects, places). Distinct microsystems afford children opportunities to experience different types of activities that alone and in combination foster individual

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development. Microsystems enable children to take on different roles and identities and establish relationships with various adults. Mesosystems constitute processes and links between two or more microsystems; in a sense mesosystems comprise systems of microsystems. The exosystem encompasses linkages between aspects of the environment the child does not directly encounter, but which influence development through lower-level micro- and mesosystems. At the outermost circle of developmental influences are overarching macrosystem patterns of beliefs, values, customs, and living conditions (e.g., culture, religion, the socioeconomic organization of society). The macrosystem is not separate from children's more immediate environments; rather, it permeates and colors exo-, meso-, and microsystems. Understanding the meaning and impact of proximal influences on the child often requires placing them within the broader macrosystem in which they are found (Bornstein, 1995). Furthermore, the impact of influences from one level can be moderated by factors that compose other linked levels. Finally, crosscutting all of these systems is time, the chronosystem. Effective time frames range from moment-to-moment exposures to developmental processes to periodicities over days or weeks to macro time frames of the life course, generations, or historical eras.

One notable consequence of multiple linkages across different ecosystems that envelop the child is the probabilistic nature they define for development. Another is the requirement that scientists adopt a frankly multidisciplinary approach to understanding child development. As bioecological theory provides a rich and generative framework for understanding the growth of children, it guides the organization of this volume. Multiple systems and numerous disciplines describe the bioecological landscapes of the child.

### A BRIEF TOUR OF VOLUME 4

Although we have not formally divided Volume 4 into sections, this collection of chapters can be seen to arrange itself into five divisions that identify spheres of influence vis-à-vis children and their development. The first constitutes a broad overview of time and history, laying out the conceptual underpinnings and setting the stage for the rest. The ensuing substantive chapters add contemporary surveys of separate constituents of the relational developmental systems perspective in developmental science. The second group of chapters focuses on the immediate

social ecology of children with their significant others, notably parents, families, and peers. The third part sets children in their most common everyday institutional and group circumstances of childcare and school as well as activities, work, and media. The fourth section complements the third in setting children in their equally prevalent and more encompassing community and physical contexts of home and neighborhoods. The fifth section of this volume casts children and child development in even broader contexts of socioeconomic status, medicine, law, government, war and disaster, culture, and history. The final chapter overviews what precedes in terms of assessment and measurement.

In Chapter 2, "Human Development in Time and Place," Glen H. Elder Jr., Michael J. Shanahan, and Julia A. Jennings set the scene of human development in terms of life course theory, bringing contexts and temporality to the full flower of children's lives. They explain life-span concepts and perspectives of human development including, notably, social pathways, cumulative processes, and durations, trajectories, transitions, and turning points. These paradigmatic principles of life course theory turn on human agency and social options, the impact of historical time and place, and societal change in the life course.

The second conceptual section of this volume focuses on children with their significant others, specifically parents, families, and peers. In Chapter 3, "Children's Parents," Marc H. Bornstein first identifies parenting for parents and for children and then considers parenting theory and research in historical and future perspective. He proceeds next to describe biological and social parents and parenting cognitions and practices and then evaluates evidence for parenting effects on children through various designs and experiments. Bornstein afterward explores the multiple determinants of parenting and assesses all-important practical issues related to parenting.

In Chapter 4, "Children in Diverse Families," Lawrence Ganong, Marilyn Coleman, and Luke T. Russell define a panoply of contemporary families and theoretical and conceptual perspectives related to children living with unmarried parents, bereaved children, children in single-parent families after divorce, stepfamilies, gay and lesbian parents, families constructed by assisted reproductive technologies, and children reared by grandparents. The authors conclude with a discussion of the chief challenges and concerns in the study of children and development in these nontraditional, but increasingly frequent, family configurations.

In Chapter 5, "Children in Peer Groups," Kenneth H. Rubin, William M. Bukowski, and Julie C. Bowker discuss

children's peer interactions, relationships, and groups. Using a multilevel model, they describe conceptually how various peer relationships, such as friendship, popularity, and acceptance/rejection, are integrally related, how they are shaped by individual characteristics, culture, and contexts, and how they influence children's development. The authors give careful consideration throughout to issues of measurement and the reciprocal nature of individual attributes and peer relationships.

The third part of Volume 4 sets children in their most common everyday circumstances of institutional childcare and schools and public domains of activities, work, and media. In Chapter 6, "Early Childcare and Education," Margaret Burchinal, Katherine Magnuson, Douglas Powell, and Sandra Soliday Hong review nonparental care today, and use the dimensions of childcare—use, type, quality, and quantity—to describe early childhood experiences. They also address strategies that ensure quality and access to childcare including via public policy.

In Chapter 7, "Children at School," Robert Crosnoe and Aprile D. Benner attend to the role of schools in children's development and the significance of schooling in children's lives. They consider links between education and inequality, schools as educational institutions, and social, emotional, and academic outcomes of schooling. School structure, composition, and curriculum and instruction are all central issues for children, as are children's social relationships in school. Throughout the chapter, Crosnoe and Benner also address desegregation, school transitions, and public health in schools.

In Chapter 8, "Children's Organized Activities," Deborah Lowe Vandell, Reed W. Larson, Joseph L. Mahoney, and Tyler W. Watts delineate children's organized activities in historical and global contexts. Children engage in a breadth of activities, whose prevalence, processes, quality, and selection are all important to their development. Child, family, and program characteristics predict children's participation in organized activities. Vandell and colleagues cover after-school programs, extracurricular activities, unsupervised out-of-school time, self-care, and unsupervised time with peers.

In Chapter 9, "Children at Work," Jeremy Staff, Arnaldo Mont'Alvao, and Jeylan T. Mortimer review demographic precursors of child and adolescent employment and the sectors where children work. They then survey perspectives on children's work, including whether children and adolescents should work, the effects of paid work on adolescent achievement and adjustment, and the injurious as well as beneficial consequences of work for children.

In Chapter 10, "Children and Digital Media," Sandra L. Calvert reviews parasocial relationships and interactions when children go online. She examines the history and evolution of media platforms, the ecology of the digital world, and media access. She then characterizes media exposure and the role of media in various domains of children's lives including imaginative play and creativity, sleep and concentration, violence, stereotyping, and health. Calvert concludes with policy issues related to early media exposure, the V-chip, and the commercialization of childhood.

The fourth section of Volume 4, which complements the third, examines children in their equally prevalent but more encompassing social and physical settings. In Chapter 11, "Children in Diverse Social Contexts," Velma McBride Murry, Nancy E. Hill, Dawn Witherspoon, Cady Berkel, and Deborah Bartz introduce implications of ethnicity for theory and research in child development. They then review demographic shifts in the United States, universal and cultural-specific parenting practices, and parenting multiethnic children in terms of identity, third cultures, adoptions, and developmental outcomes in academics and friendships.

In Chapter 12, "Children's Housing and Physical Environments," Robert H. Bradley shows how affordances of settings and the construction of life niches, in which housing quality, materials, water provision, sanitation, food storage/refrigeration, electricity, ventilation and cooking facilities, indoor and outdoor contaminants, noise, and crowding all contribute to children's development. In addition, he discusses materials at hand for play and equipment for physical activity, home literacy and numeracy environments, and other physical supports to the development of children.

In Chapter 13, "Children in Neighborhoods," Tama Leventhal, Veronique Dupéré, and Elizabeth Shuey provide a survey of how and why neighborhoods matter for children's development in terms of their socioeconomic structure as well as the institutional resources and social processes that exist within them. The authors also attend to how neighborhoods intersect with other contexts, namely families, schools, and peers, and also with key individual characteristics, such as gender, ethnicity, and biological/psychological vulnerabilities. The chapter concludes by addressing neighborhoods as a unit of intervention for improving children's development.

The fifth section of Volume 4 casts children and child development in even broader frameworks of socioeconomic class, medicine, law, government, war and disaster, culture, and history. In Chapter 14, "Children

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and Socioeconomic Status,” Greg J. Duncan, Katherine Magnuson, and Elizabeth Votruba-Drzal define resources based on socioeconomic status (SES) in terms of family and parental income (poverty, wealth), schooling, and occupation. They point to macro trends in family SES and summarize what is known about SES and child development from within-family variation, natural experiments, and empirical research. From these considerations, the authors derive key policy implications.

In Chapter 15, “Children in Medical Settings,” Barry Zuckerman and Robert D. Keder summon an historical perspective on medical care for children, looking at selective impacts of the shifting epidemiology of childhood disease, the hospital environment, and disparities in health care and health. These authors adopt a life-course approach to health development beginning with the prenatal environment and include the material environment and stress, health behaviors, and maternal health as all related to children’s health. Zuckerman and Keder are concerned as well with primary care and prevention, and they discuss children with chronic illnesses and technology-dependent children.

In Chapter 16, “Children and the Law,” Elizabeth Cauffman, Elizabeth Shulman, Jordan Bechtold, and Laurence Steinberg undertake to review the legal treatment of children and the family, including children in custody decisions, adoption, foster care, and the termination of parental rights. They look at the law with respect to children as plaintiffs and emancipated minors; they review zero-tolerance policies and the school-to-prison pipeline, children and adolescents in the justice system, the legal regulation of minors’ medical decision-making capabilities, and exceptions to parental authority in judging children’s maturity in medical and societal contexts.

In Chapter 17, “Children and Government,” Kenneth A. Dodge and Ron Haskins underscore the multiple serious roles of government in children’s lives. They serially address the problems of poverty and inequality, government programs for children, Social Security, the war on poverty, and government spending on children. A broad swath of government policies for children (including economic and budget constraints) falls under their purview, and Dodge and Haskins conclude with a plea for evidence-based policy making.

In Chapter 18, “Children in War and Disaster,” Ann S. Masten, Angela J. Narayan, Wendy K. Silverman, and Joy D. Osofsky underscore the challenges children face from war and natural and technological disasters. They review effects of variation in exposure, determinants of exposure, and diversity of responses. The outcomes for children are

set in terms of risk and resilience models, and the authors also analyze cascading consequences and the intergenerational transmission of trauma. Masten and colleagues review intervention and prevention research strategies to remediate these debilitating circumstances on children.

In Chapter 19, “Children and Cultural Context,” Jacqueline J. Goodnow and Jeanette A. Lawrence outline the meanings of culture and cultural level influences on children. They cover universals as well as situational bases of similarity and difference; common units of analysis in place, activities, and people; continuity and change; and uniformity and diversity. They also consider influences from single and multiple cultural contexts and acculturation for children’s development.

In Chapter 20, “Children in History,” Peter N. Stearns looks at the emergence of the history of childhood and childhood history as a field of study. Topics that dominate this perspective include periodization of the life span, children in agricultural societies, the role of religion, and specific historical periods (such as the early modern centuries and modern industrial childhoods). Contemporary changes in non-Western societies and the globalization of childhood are other pivotal issues Stearns addresses.

The final chapter in Volume 4 provides an overview of the volume by focusing on appraisal and measurement. In Chapter 21, “Assessing Bioecological Influences,” Theodore D. Wachs revisits the bioecosystem structures surrounding the child, stressing methodological implications of the bioecological framework. He addresses children in real-world situations; the use of “social addresses”; integrating higher-order contexts, persons, and time into the study of proximal processes; and integrating across process, person, context, and time. Other topics include measurement precision, the utilization of cost-efficient ecological measures, interpretability, and applications of the process-person-context-time framework to intervention.

All of the chapters in Volume 4 generally adhere to the same overall organization in moving from (or between) theory to research to policy. They commonly adopt a relational developmental systems perspective as embodied in the bioecological approach. Each treatment covers historical ideas, a diversity of theoretical perspectives, research methodologies, developmental trajectories, emerging issues, and directions for future theory and research. Each focuses on research from the United States but includes the rest of the world as well. Where appropriate, each concludes with reflections on policy and calls to action for developmental scientists.



## CONCLUSIONS

The clear lesson imparted by chapters in Volume 4 of the *Handbook of Child Psychology and Developmental Science* is that children's development is dynamic, multifaceted, and complex. Failing to appreciate the many forces affecting development has impeded our understanding of children generally and specifically in the five spheres of influence overviewed by this volume. As these chapters illustrate, it is only by considering how each context contributes to development in relation to other contexts, in relation to person characteristics, and in relation to time that our field will move forward. All of the authors in Volume 4 are mindful of the complexity inherent across the bioecological landscapes of children's development. To realize their stated goals required a deep as well as a broad understanding of the full scope of children's development—moving beyond the comfort of one's own zone of expertise on a particular social ecology to incorporate wisdom from other areas of developmental science and other disciplines. It also required facility with a large, diverse, and sophisticated methodological toolbox. The authors of these chapters do not limit themselves to single measures, methods, or approaches.

These lessons are vital to progress in developmental science. They are also critical for producing research that informs policies and practices to improve children's health and well-being (Huston, 2008). The contexts of children's lives are often viewed as points of intervention. The call for evidence-based policy making echoes across chapters in Volume 4 and contributes to the contemporary dialectic. At least that is our goal.

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## CHAPTER 2

# Human Development in Time and Place

GLEN H. ELDER JR., MICHAEL J. SHANAHAN, and JULIA A. JENNINGS

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## INTRODUCTION

The life course and human development has flourished as a field of study during the past quarter century, extending across substantive and theoretical boundaries (Mortimer & Shanahan, 2003), and now appears in many subfields of the social, behavioral, and medical sciences. With this change has come an increasing appreciation for linkages between changing contexts and human development.

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The term *context* refers to the social embedding of individuals and typically entails study of biographical, historical, and ecological variations. The social concept of life course refers to a temporal pattern of age-graded events and roles that chart the social contours of biography, providing a proximal context for the dynamics of human development from conception and birth to death.

Conceptual and methodological breakthroughs associated with the interdisciplinary life course framework, coupled with the dramatic expansion of long-term longitudinal studies, have generated more research and knowledge than ever before about behavioral adaptations in real-world settings around the globe. We are also increasingly aware of people as agents of their own lives. New avenues of research have opened, and the future offers exciting promise for understanding how dynamic views of context and the person—including biological dimensions—interact to influence achievements, exposure to stressors, physical and psychological well-being, and social involvements.

This contextualization of lives and developmental processes occurs through the patterning of social roles, events, and age distinctions; and in a multilevel context of family/primary group, neighborhood, community, economic region, and country. The meaning of historical time and context stems in large part from the ecological process of place and its multiple levels (Bronfenbrenner, 1979). A distinctive feature of this ecology is its social inequalities of class, ethnicity, and gender. They are expressed across individual lives and the generations in cumulative dynamics of advantage and disadvantage through childhood, adolescence, and the adult years.

We begin this chapter by viewing the evolution of life course thinking as a response to the challenges that stem from following children into young adulthood, middle age, and late life. This chapter is also a product of the remarkable growth of these studies from the 1960s to the end of the century. Life course ideas in developmental science, social roles and relationships, and concepts of the age-graded life course are prominent in this conceptual advance. By the end of the 1990s, a new synthesis, linking theory on social relationships and age, had become a theoretical orientation on the social life course and its influences on human development in historical and ecologically defined contexts. Multiple lives are interdependent in this developmental process.

The elementary concepts and perspectives of life-course theory are surveyed next, with emphasis on the individual life course, its institutionalized pathways, and its social and developmental trajectories and transitions. Early research on social change in lives has generated a set of mechanisms that link lives and developmental dynamics to changing contexts. These mechanisms include the life stage of people when they encounter drastic change to their environment, the social imperatives that structure adaptations to new situations, the control cycle that life change initiates (loss of personal control prompts efforts to regain such control), and the tendency for new situations to accentuate matching dispositions. These mechanisms are embedded in a conceptual framework on the life course and development that is defined by core paradigmatic principles—the life-long process of human development and aging, the timing of events in the life course, human agency, the interdependence of lives, and historical time and place. We discuss these mechanisms and principles by drawing on relevant theory and research.

Traditional thinking about the place or location of individuals is undergoing significant elaboration through ecological studies of human development. We turn to this

work and the theoretical implications of research on social contexts and the flow of families and children between them. Lives are lived by entering and leaving social roles, groups, and places. What factors influence these decisions? How can we understand human agency and contextual effects as parents construct the residential life course of their children? We investigate such questions through studies of place and migration in the lives of families and children. Genetic dispositions are relevant to this process, and we refer readers to our prior edition of this chapter (Elder & Shanahan, 2006) for such coverage.

Ecological influences are expressed in part through the impact of their historical time on lives and developmental processes. Although studies have tended to consider ecological effects apart from historical context, we attempt to inform this section of the chapter with both perspectives. Three topics highlight their interdependence: (1) considerations in studying changing times in lives; (2) societal change in lives, with a focus on contemporary China and its rural–urban divide; and (3) the impact of social discontinuities on the life course of young people during the dissolution of the Soviet Union into multiple sovereign states (late 1980s) and the reunification of Germany (1991). These two events transformed life in Eastern Europe, especially for the young who faced a new world of opportunities and stresses. We conclude this chapter by noting that the contextual frontier on human development is moving toward an integration of ecological and temporal perspectives.

The title of this chapter reflects its intergenerational, life course, and longitudinal perspective. Longitudinal samples enable us to follow children into adolescence and then to young adulthood with its social roles of advanced education, military service, parenthood, and work. According to this developmental life course perspective, children age into adulthood and its family roles, and parents eventually become grandparents. At any point in the life span, all ages are commonly represented in a person's social world. The developmental significance of early life experience becomes most fully understood in the context of the later years.

## THE DEVELOPMENT OF LIFE COURSE THEORY

The magnitude of intellectual development in life course studies is suggested by considering studies of person and society during the 1950s. In his widely read *The Sociological Imagination*, C. Wright Mills (1959) encouraged “the study of biography, of history, and of the problems

of their intersection within social structure” (p. 149). Mills started with the individual and asked what features of society produce such a person. He argued that the seemingly “personal problems” of one’s biography are better understood as repercussions of broad social tensions. He had few empirical examples, however, and was not concerned with dynamic views of person and context. Rather, he focused on types of society and adult behavioral patterns, with little recognition of social change, development and aging, or even human diversity. In this age of the cross-sectional survey, studies that followed children and adults over part of their lives were very rare. This was especially true for longitudinal studies of people in their social and historical contexts. With this in mind, it is not surprising that a dynamic concept of the life course had not yet appeared in the scholarly literature and was not addressed in the seminars of leading graduate programs.

The unfolding story of life course theory up to the present owes much to path-breaking studies that were launched more than 80 years ago at the Institute of Child Welfare (now Human Development) at the University of California in Berkeley: The Oakland Growth Study (birth years 1920 to 1921) and the Berkeley Growth and Guidance Studies (birth years 1928 to 1929). These studies were launched around 1930–1931. When the studies began, no one could have imagined what they eventually would mean for the field of human development. The original investigators did not envision research that extended into the study members’ adult years, let alone into the later years of middle and old age.

There were many reasons for this focus on childhood and adolescence. Except for support from the Laura Spelman Rockefeller Foundation, funds for longitudinal studies were virtually nonexistent. The National Institutes of Health (NIH), major funders of such studies today, were not established until after World War II. With support from NIH, the classic Framingham Longitudinal Heart Study of the adult years was launched in 1946 and has evolved into a multigenerational project. However, the idea of adult development had not yet captured the attention of social, behavioral, and medical science. A mature field of adult development and aging was still decades away from becoming a reality. In the United States, the National Institute of Aging was not established until the mid-1970s.

Nonetheless, these barriers did not restrict the studies from continuing into the adult years and middle age. The Institute of Human Development contacted members of the Oakland Growth Study for interviews in the late

1950s, and another follow-up, scheduled in 1972 to 1973, joined the lives of all study members, some parents, and offspring, in an intergenerational framework. The Berkeley Guidance and Growth Studies became part of this follow-up. By the 1970s, Block (with the assistance of Haan; see Block & Haan, 1971), had completed a pioneering longitudinal study focused on continuity and change in personality from early adolescence to the middle years in the lives of the Oakland and Berkeley study members. Also during the 1970s, Vaillant (1977) followed a panel of Harvard men (recruited as students between 1939 and 1942, known as the W. T. Grant Study) into the middle years of adulthood, assessing mechanisms of defense and coping.

Another study at the Institute of Human Development (Elder, 1974/1999) placed the lives of members of the Oakland Growth Study and Berkeley Guidance Study in the Great Depression and traced the influence of hardship on family life, careers, and health up to midlife. Using data from a retrospective life history survey, this study also investigated the impact of military service in World War II and the Korean War on men’s lives. To cap off this active decade, investigators at the institute conducted a multifaceted study that revealed patterns of continuity and change in social roles, health, and personality, with a distinctive emphasis on life patterns across the middle years (Eichorn, Clausen, Haan, Honzik, & Mussen, 1981). Both historical cohort comparisons and intergenerational connections were part of this project.

At Stanford University, a research team headed by Robert Sears actively followed members of the Lewis Terman sample of talented children into their later years. The Terman Study had become the oldest, active longitudinal study at the time, with birth years extending from 1903 to the 1920s. By the 1990s, the project had assembled 13 waves of data spanning 70 years (Holahan & Sears, 1995), and research was beginning to show the historical imprint of the times on the study members’ lives, from the 1920s to the post–World War II years and into old age (Crosnoe & Elder, 2004; Shanahan & Elder, 2002). Over 40% of the men entered military service during World War II and 25% were involved in war industries on the home front (Elder, Pavalko, & Clipp, 1993). The lives of women in the Terman sample vividly reflect the gender-role constraints of society on their employment.

This extension of the child samples to the adult years provided an initial momentum for the scientific study of adult development and sharpened awareness of the need for a different research paradigm that would pay attention

to human development beyond childhood and to contexts beyond the family. Such work offered great promise for illuminating the intergenerational dynamics of parents and their children. The extension also enabled documentation of the implications of early childhood experience for health in later life, a research domain of major scientific significance in the 21st century (see Herd, Robert, & House, 2011). Child-based models of development had little to offer because they did not address development and aging in the adult life course and were not concerned with changing social contexts. For the most part, the Oakland and Berkeley studies of continuity and change from childhood to the adult years were limited to evidence of correlational patterns between measures at time 1 and time 2 (Jones, Bayley, Macfarlane, & Honzik, 1971). The intervening years and their mechanisms remained a “black box.” Little, if anything, could be learned about linking events and processes from such analysis.

This observation also applies to Kagan and Moss (1962) who studied children in the Fels Longitudinal Study from “birth to maturity” by using correlation coefficients to depict behavioral stability across the years. Their approach ignored the diverse paths children take into adult life. By age 23, some of the study members followed a path to college, full-time employment, and marriage, and others entered military service or mixed employment and education. The timing of such transitions was important in determining their meaning and implications. For example, adolescent marriage and parenting are coupled with more social and economic constraints than the same transitions that follow a normative timetable, whereas late family formation maximizes the disruptive effect of young children. However, these considerations of timing and context—so richly descriptive of lives—were of little interest. In large part, this inattention reflected the view that continuity of behaviors and psychological dispositions required little explanation aside from the label “stability.”

Empirical studies of children into the adult and midlife years revealed major limitations to conventional knowledge of human development, which, in turn, posed major challenges for the future study of behavior:

- To replace child-based, “ontogenetic” accounts of development with models that apply to development and aging over the life course.
- To think about how human lives are organized socially and develop over time, exhibiting patterns of constancy and change.

- To relate lives to an ever-changing society, with emphasis on the developmental effects of social change and transitions.

As a whole, these challenges represent a view of human development advocated by proponents of contextualized development (e.g., Cairns & Cairns, 2006) and by the early Chicago school of sociology (Abbott, 1997), especially William I. Thomas. In the first decades of the twentieth century, a time of transformation in U.S. society, Thomas made a persuasive case for studying social change as “experiments of nature” in the lives of immigrants and children. Inspired by *The Polish Peasant in Europe and America* (Thomas & Znaniecki, 1918), researchers began to use life-record data to investigate the impact of social change. Before most of the innovative longitudinal studies had been launched, Thomas urged in the mid-1920s that priority be given to “the longitudinal approach to life history” (Volkart, 1951, p. 593). He claimed that studies should investigate “many types of individuals with regard to their experiences and various past periods of life in different situations” and follow “groups of individuals in the future, getting a continuous record of experiences as they occur.”

Social transformations of the 20th century raised many questions about historical variations beyond family life and kinship, such as schools, neighborhoods, and communities. In the classic Middletown studies (Lynd & Lynd, 1929, 1937), findings on families during the 1920s seemed to have little relevance to family life in the Great Depression. Life course theory emerged in response to such issues and to the challenge of an aging population as well as the rapid growth of longitudinal studies. In the terminology of this chapter, the life course refers most broadly to a theoretical orientation (or paradigm) that provides a framework for the study of changing lives in changing contexts. To use the distinction of Merton (1968), theoretical orientations establish a common field of inquiry by defining a framework that guides research in terms of problem identification and formulation, variable selection and rationales, and strategies of research design and analysis.

Based in large part on sociocultural theories of age and social relationships (Elder, 1975; Neugarten, 1968; Ryder, 1965), the concept of life course refers to a sequence of age-graded events and roles that defines the sociological contours of biography. A sociocultural perspective gives emphasis to the social meanings of age. Birth, puberty, and death are biological facts, but their meanings in the life course are social facts or constructions. Age distinctions



are expressed in expectations about the timing and order of a transition or change in state, whether relatively early, on time, or late. The life course can be linked historically to specific transitions and to the meanings of cohort membership (Riley, Johnson, & Foner, 1972). Birth year locates people in specific birth cohorts and thus according to particular social changes. The social life course of individuals is embedded within specific birth cohorts and their ecological dynamics. These dynamics may take the form of cumulative processes of life course inequality.

These dynamics may be expressed as cumulative processes of social inequality from early childhood into the adult life course. Disparities in socioeconomic status, ethnicity, and gender can initiate processes of disadvantage or advantage that increasingly differentiate people over the life course. There are numerous scenarios of cumulative disadvantage, such as the early death of a parent, which results in a child's depressed feelings, behavior problems in school, erratic attendance, and the eventual loss of opportunity. Potential turning points along this life course can liberate youth from the grip of this negative dynamic such as through residential change that improves family life and the school environment (Wachs, Chapter 21, this *Handbook*, this volume).

G. H. Elder, this chapter's senior author, encountered such ideas about age and the life course in the 1960s, shortly after arriving at the Institute of Human Development (at UC Berkeley in 1962) to work with sociologist J. A. Clausen on the Oakland Growth Study. The dramatic changes of families and individual lives across the 1930s focused his attention on the patterning of lives and connections to a changing socioeconomic environment. Codes that captured trajectories were needed for people's lives instead of the conventional codes for status at a point in time such as socioeconomic status (SES). The link between age and time provided an important step in this direction. The resulting perspective suggested a way of thinking about the social construction of individual lives, along with ideas from the life-history tradition of the early Chicago School of Sociology. *Children of the Great Depression* (Elder, 1974/1999) represented the published version of this initial effort to fashion a life course framework.

Since its inception, the field of life course studies has expanded its purview beyond historical variations to include dynamic contextual variations within and between cohorts—the ecology of human development (Bronfenbrenner, 1979). Studies revealed dramatic cohort diversity with respect to poverty experiences and economic

fortunes, residential mobility, and neighborhood composition (Shanahan, Sulloway, & Hofer, 2000). Each life is marked by social change in these respects, and the life course framework is useful in studying how these dynamics shape lives and also how the social aggregate of individual life patterns affect social institutions, such as schools and labor markets.

### Bringing Contexts and Temporality to Lives and Development

The socioeconomic context of human development became a compelling social issue in the hard times of the Great Depression (1930s), but the economic crisis did not place this theme on the research agenda of the California longitudinal studies, the Oakland and Berkeley projects (see Duncan, Magnusson, & Votruba-Drzal, Chapter 14, this *Handbook*, this volume). They continued to reflect the research interests of the investigators rather than the economic depression. The Oakland Growth Study focused on physical growth and development, a long-time interest of a codirector, and employed methods of social observation in field settings. The Berkeley Study under Jean Macfarlane's leadership stressed the collection of data on family relationships and parental influences. Data collection for both projects included information on the socioeconomics of family life, but the investigators did not make effective use of the data in empirical research. It would be difficult to know from study publications that the Oakland and Berkeley children were growing up during the Great Depression.

The absence of a socioeconomic-cultural context beyond the immediate family in the Berkeley Study was noted by a faculty member whom Macfarlane had invited to one of the study's seminars. In a letter dated September 25, 1941, this person (identity unknown) expressed dismay concerning the neglect of material culture. In his view, family was overemphasized at the expense of other cultural factors. With reference to the case of a young girl in the study, he observed that "she is described as a person of almost any age in almost any society." Despite an inadequate contextualization of development, the early Berkeley and Oakland studies made sure that measures of the material culture were used in data collection across the 1930s and thus ensured that these data would be available to subsequent generations of investigators. As a result, the senior author was able to carry out a longitudinal study of "children growing up in the Great Depression." The Oakland data archive included socioeconomic information for 1929

(before family income change) and 1933, the very worst year of the economic depression.

This Great Depression project evolved from the senior author's research affiliation with the Oakland study at the Institute of Human Development in the 1960s. Trained in both sociology and psychology, Elder had been hired by the new director of the institute, sociologist Clausen, to work toward a design for coding the Oakland data. The ever-changing families of the Oakland Study sensitized Elder to the need for temporal concepts and measures and focused his attention on "ways of thinking about social change, life pathways, and individual development" (Elder, 1998b, p. 1). But how to conceptualize them? His prior work on adolescence and the transition to adulthood introduced him to the research of Neugarten (1968) on the meanings of age and age-graded expectations and timetables. This anthology includes Neugarten's pioneering papers from the 1950s and early 1960s. Other age concepts on historical time and timing were associated with birth year and age cohorts, as developed by Ryder (1965).

Role theory and the social capital of linked lives provided another way to think of the life course and its relation to other lives. The concept of role transitions by life stage indicates whether the transitions are early or later in a person's life. Roles and their behavior could be viewed in terms of experiences that are brought to them and in terms of the time span of "being in that social role," as well as according to issues of continuity and discontinuity associated with leaving a role. Along with the traditions of life history and career studies, the concept of life cycle was perhaps the most prominent perspective on a person's life at the time, especially regarding family life. In a life cycle of generational succession, the young person is socialized to maturity, gives birth and nurtures members of the next generation, grows old, and dies. Each concept has relevance to a person's life path. Role theory, as well as the life cycle, became part of an effort at the Institute of Human Development to develop a theoretical approach to individual lives and human development that would be useful for a study of the Oakland cohort across the Great Depression. With family income available for 1929 and 1933, the Oakland study could assess the extent of socioeconomic deprivation and its consequences among families and the study members.

This approach to lives in changing times and places has evolved into a prominent theoretical orientation on the life course in the twenty-first century. Notable developments have occurred across the social and behavioral sciences, from sociology (Elder, 1974/1999, 1975, 1985; Riley et al., 1972), demography (Ryder, 1965), history (Hareven,

1978, 1982; Modell, 1989), and anthropology (Kertzer & Keith, 1984), to ecological models (Bronfenbrenner, 1979) and life-span developmental psychology (Baltes & Nesselroade, 1979). Major examples include:

*Recognition of a life course perspective on human development* that extends from the prenatal period to maturity, late life, and death. The rapid growth of longitudinal studies that link childhood to the adaptations of later life has facilitated what might be called a "whole life course" approach to human development and aging (Elder & Giele, 2009). An understanding of the trajectory of human development and aging begins in the prenatal years. This observation is a foundational theme of the Millennium National Longitudinal Study in the United Kingdom. The project was launched during 2000 and 2001 as a study of how the British people age from birth to old age and death.

- *Life-history calendars for the collection of retrospective accounts of life events* have been applied to numerous longitudinal studies (Brückner & Mayer, 1998; Caspi et al., 1996; Freedman, Thornton, Camburn, Alwin, & Young-DeMarco, 1988). Retrospective life history methods enable investigators to collect information on the life history of people and their world, though retrospection always entails some error of recall.
- *Greater appreciation for the necessity of longitudinal and contextually rich data* (Ferri, Bynner, & Wadsworth, 2003; Hauser, 2009; Phelps, Furstenberg, & Colby, 2002). In a special issue of *Science*, Butz and Torrey (2006) refer to the longitudinal study design as one of the greatest innovations of the 20th century in the social sciences—"a living observatory and potential laboratory augmented by case study and ethnography." Bynner (2014) describes the longitudinal survey as "the essential tool for meeting the challenges of a (developmental) science that needs to adapt continually in response to social, economic, technological, and political change."
- *Appropriate statistical techniques have been developed for multilevel, longitudinal studies.* They include hierarchical linear and trajectory models along with structural and dynamic person-variable and person-centered techniques (Bergman, Magnusson, & El-Khoury, 2003; Collins & Sayer, 2001; Little, Schnabel, & Baumert, 2000). Significant advances have also been made in the study of historical and cohort effects through new age-period-cohort methods that provide better estimates and identify explanatory mechanisms (Yang & Land, 2013). The past two decades have also witnessed major



advances in the study of “the ecology” of human development. Sampson (2012) has used the term *ecometrics* to refer to social observational methods in studying urban and rural places (see also Wachs, Chapter 21, this *Handbook*, this volume).

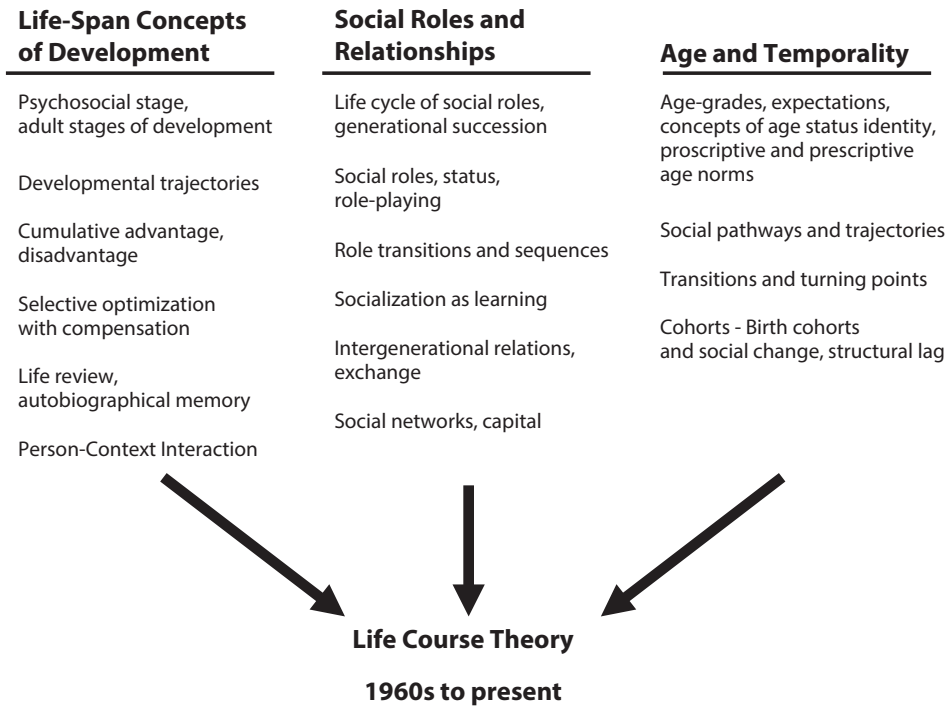
- *Cross-disciplinary models of collaboration*, particularly with psychology and history as well as biology and the medical sciences (Elder, Modell, & Parke, 1993; Levy & the Pave Team, 2005). These models include new and exciting developments in subfields devoted to the study of physical and emotional well-being (Halfon & Hochstein, 2002; Hertzman & Power, 2003; Kuh, Ben-Shlomo, Lynch, Hallqvist, & Power, 2003). New initiatives from the Maternal and Child Health Bureau emphasize the life course perspective, such as the formation of a Maternal and Child Health Life Course Research Network. The objective of the network is to facilitate life course studies that inform Maternal and Child Health programs, policy, and practice and improve “health outcomes for mothers and children.”
- *A growing awareness that*, beyond history and the differing experiences of cohorts, *social change may entail an ecological change within cohorts* through diverse life histories (Shanahan, Mortimer, & Kruger, 2002). Aspects of a social ecology are typically inter-correlated, and their synergistic interactions are critical to an understanding of time and place.

These developments represent significant advances in studies of the life course and human development. Life course theory today has much in common with interactionist thinking at the micro level, with its emphasis on transactions between person and ecology (see Magnusson & Stattin, 2006)—but it also attends to the organizations and reorganization of social structures and pathways through life. As might be expected, life course theory shares many objectives and concepts with Bronfenbrenner’s ecology of human development (1979; with Morris, 2006), especially its multilevel concept of the environment. However, life course models bring a more temporal perspective to the environment and individual. The life course paradigm also shares the ambition of life-span developmental psychology in rethinking the nature of human development and aging (Baltes, Lindenburg, & Staudinger, 2006), but it is more contextual in orientation and application. Indeed, the contextual limitations of the Oakland and Berkeley life-span studies in the early 1960s motivated efforts to place lives and developmental processes in historical time and social pathways.

These connections with life course theory and research add up to a much larger intellectual advance, one framed by relational developmental systems thinking in a multilevel, dynamic perspective known as developmental science. From the 1998 edition of the *Handbook of Child Psychology* and in the sixth edition, Lerner (2006, p. 6) observed that students of human development have witnessed “a sea change that perhaps qualifies as a true paradigm shift in what is thought of as the nature of human nature and in the appreciation of time, place, and individual diversity for understanding the laws of human behavior and development.” Consistent with the central theme of this chapter, Lerner asserted that “one must appreciate how variables associated with person, place, and time coalesce to shape the structure and function of behavior and its systematic and successive change” (2006, p. 7).

The principal traditions that led to an interdisciplinary framework of life course theory are illustrated by Figure 2.1: life-span development, social roles and relationships, and age and temporality. We begin with life-span concepts of development because this line of work prompted efforts to contextualize developmental processes across the life span. Two theoretical traditions in social science, social roles/relationships and age, provide a way to think about the social life course. Social roles and role transitions are basic elements of the life course, but they are timeless. That is, a role transition is not specific in terms of when it occurs. Chronological age brings time and timing to the social life course, and thus makes it more dynamic as a contextualization of development. Age data on birth year also locate individuals in historical time and in relation to ecological processes.

Life-span development refers in some ways to the longitudinal research that was underway at the Institute of Human Development when the senior author joined the staff to work with the Oakland Growth Study (in 1962). Bayley and Honzik were involved in longitudinal studies of intellectual development from childhood into the adult years (Jones et al., 1971). Other longitudinal studies focused on the stability of temperament dimensions from the early years into adulthood. Block had launched a program of research that used the California Q Sort to assess personality in adolescence and the adult years for a longitudinal study of life-span trajectories of personality. This project became *Lives Through Time* (Block & Haan, 1971). In method, most especially, this ambitious study represents a path-breaking example of a person-centered study of life-span trajectories of personality. However, this project, as well as others noted earlier, was seriously



**Figure 2.1** The emergence of life course theory: Research traditions and their concepts.

underdeveloped on the contextual side. None of them provided an understanding of the lived lives of the study members in historical time.

Pioneering work under the theme of life-span concepts features the studies and writings of Erikson (1950) on ego identity and psychosocial stages of development as well as the foundational contributions of Baltes (1997) to the evolution of life-span developmental psychology, from the late 1960s into the 21st century. This contribution includes his conceptualization of the process of selective optimization with compensation, a metatheory of development and aging discussed more fully in the pages to come. In a younger generation, Lerner (1982, 1991) emphasized the relative plasticity and agency of the organism, the multidirectionality of life-span development, and the lifelong interaction of person and social context. The concept of developmental task, perhaps first defined by Havighurst (1949), also represented a way of viewing development across socially defined life stages. The concept alerts the analyst to the possibility that different experiences and skills tend to be highly salient at different points in life. However, empirical evidence for distinct psychosocial stages is not compelling. The perceived or defined life course can change with aging through successive life reviews (Staudinger, 1989) in which the past is assessed in light of the present.

In the theoretical tradition of “social relations,” we come to a long prominent way of thinking about a person’s lived life, with a focus on the sequence of social roles, their socialization, and self or identity. The sequence establishes a life course that links the person to others. Central to this tradition is Merton (1968) on role sets and reference groups, Rosenberg (1979) on self-esteem, and Bronfenbrenner (1970) on socialization, to name a few. Early work in this tradition includes the studies of Thomas (Thomas & Znaniecki, 1918) on social roles and transitions in life histories, Mead (1934) on socialization and the self, Hughes (1971) on work and the self, Lewin (1948) on power-dependence relations, and Vygotsky (1978) on language, the self, and social relationships.

Studies of intergenerational relations have expanded from two to three and now even four generations, with important contributions from Jackson (2000) and his three-generation study of African Americans along with a rural Iowa longitudinal study of three generations (Elder & Conger, 2000). The most impressive multigeneration longitudinal study to date was initiated by Bengtson circa 1970 (Bengtson, Putney, & Harris, 2013) on contemporary issues of the generation gap. Launched in the greater Los Angeles region, this study has continued into the present century with four, and even five, living generations.

Several topics illustrate distinctive contributions to the third strand of life course theory—age and temporality. Every event in life is marked by an age, such as marriage and the birth of children. Birthday celebrations mark each new year for a young child who is surrounded by adults who are getting older. In the first volume of the *Annual Review of Sociology* (Elder, 1975), the senior author's essay focused on two life course perspectives based on age, the role of age and birth year in a cohort historical perspective, and a sociocultural perspective involving age expectations, identities, and norms. Social and cultural anthropologists, such as Mead (1963) and Linton (1942), observed and wrote about the role of age-graded societies and lives. Early contributions to the scholarship of age in the 1920s appear on the cohort level, as in the work of Mannheim (1952). Age as birth year locates people as members of a birth cohort in social history.

During the 1950s and 1960s, Neugarten (1968, 1996) at the University of Chicago's Committee on Human Development developed a social psychology of age across the life span. She explored concepts of age expectations and identities, standards, and norms in pioneering studies during the 1950s. In the 1970s, sociologist Riley (Riley et al., 1972) proposed a framework on age strata and cohorts for a macroscopic perspective on aging, drawing on Ryder's influential perspective (1965) regarding cohorts in the study of social change. A cohort perspective based on people born in a particular year or a specific historical time soon began to appear with some frequency, as in studies of women's work by Uhlenberg (1974), research on role sequences in the transition to adulthood by Hogan (1981), and *Birth and Fortune*, a volume by Easterlin (1987). In the field of social history, accounts of institutional and cultural change brought historical insights to the lives and pathways of young people (Modell, 1989) and adults (Hareven, 1978, 1982). With these brief overviews in mind, we turn to the development of life course theory, beginning with life-span concepts of development.

### Life-Span Concepts of Human Development

A number of efforts in the psychological sciences have been made during the post–World War II era to link developmental trajectories to social structure. However, research questions did not ask about the implications of environmental change for the developing individual.

The theory of psychosocial stages formulated by Erikson (1950) paid attention to cultural variations, but historians report little empirical support of his stages across

time and place (Mitterauer, 1993). In *The Seasons of a Man's Life*, Levinson (1978) outlined a theory of life structure that ignored variations in social structure and culture over historical time. Psychosocial transitions were affixed to age as if immutable to institutional change, such as the midlife transition between ages 40 and 45. For Erikson, Levinson, and other ontogenetic theorists, the starting point is a sequence of stages through which all persons must pass. This perspective views the social context as a “scene or setting” through which the person—loaded with his or her “natural predispositions”—must pass. By contrast, the life course paradigm views the interplay of social context and the organism as the formative process, making people who they are. Individuals do not “develop according to their natures” but, rather, they are continually produced, sustained, and changed by their social context (see Gottlieb, Wahlsten, & Lickliter, 2006).

Proponents of life-span developmental science addressed the challenges of such a view by seeking a perspective on development and aging across the life span that emphasized cultural influences and learned experiences or skills in patterns of aging. In theory, historical and cultural variations emerge as potentially influential sources of human adaptation and development. As Baltes (1979, p. 265) observed, “restricting developmental events to those which have the features of a biological growth concept of development is more of a hindrance than a help.”

Baltes (1993, 1994) played a lead role in the conceptual articulation of life-span development since the 1960s. More than most proponents of this perspective, he interacted with life course ideas and distinctions over the decades (see Baltes et al., 2006). One panel exchange between Baltes and Elder on life-span developmental psychology and life course theory was held at the 2004 Ghent meeting of the International Society of Behavioral Development.

The following propositions on life-span development are not new in themselves but they add up to a distinctive perspective:

- *Life-span development results from lifelong adaptive processes* in which some are cumulative and continuous, and others are discontinuous and innovative, showing little connection to prior events or processes.
- *Ontogenetic development is local, specific, and time bound*, so it is never fully adaptive. There is no pure advance or loss in development.
- *Age-graded influences are most important in the dependency years*, childhood/adolescence and old age, but

history-graded and nonnormative influences are most consequential across the early and middle years of adulthood.

- *Changes occur in relation to positive and negative events, gains, and losses*, with the likelihood of expected losses increasing. Biological resources decline over the life span, but cultural resources may increase through the cultivation of wisdom and problem solving.
- *Life-span development entails selection, optimization, and compensation*. These mechanisms seek to maximize gains and minimize losses or declines. Selective optimization with compensation represents a “life-span model of psychological nature of human aging and the ubiquitous, age-related shift toward a less positive balance of gains and losses” (Baltes, 1993, p. 590).

The way these mechanisms or strategies work in later life is illustrated by an interview with the renowned concert pianist Arthur Rubenstein. When asked how he remained a successful pianist in his later years, Rubenstein referred to three strategies: “(1) he performed fewer pieces, (2) he now practiced each more frequently, and (3) he introduced more *ritardandos* in his playing between fast segments, so that the playing sounded faster than it was” (Baltes, 1993, p. 590). The strategy of selection is illustrated by Rubenstein’s concentration on fewer pieces, the more frequent practice illustrates the use of optimization, and the increasing reliance on contrast in speed exemplifies a strategy of compensation.

This psychological model of successful aging has relevance for development at all ages including childhood and adolescence. Adaptations in adolescence can be viewed through the guidelines of selective optimization in which gains are maximized and risks, losses, or deprivation are minimized (see Heckhausen, Wrosch, & Schulz, 2010). Youth select activities in which they are competent (e.g., athletics, academics, military service, or street life) and optimize benefits through an investment of resources, time, energy, and relationships. Life-span developmentalists such as Baltes have enriched our thinking about development and aging across the life course, and they have given some attention to the role of social, cultural, and historical forces in developmental processes.

However, their perspective on life-span development generally fails to apprehend social structure as a constitutive force in development. The problem stems from the framework’s conceptualization of context—it refers to age-graded, history-graded, or nonnormative influences. Age-graded influences shape individual development in largely normative ways for all people; history-graded

influences shape development in different ways for different cohorts; and nonnormative influences reflect idiosyncrasies (such as physical) (see Stearns, Chapter 20, this *Handbook*, this volume). This conceptualization is unduly restrictive in two senses. First, within-cohort variability largely reflects non-normative influences, which are not easily subject to scientific study (Dannefer, 1984). As a result, the social basis for within-cohort differences becomes a residual category. Second, as Mayer (2004) noted, life-span psychology views historical and nonnormative influences as idiographic (i.e., unique, non-repeating), leaving only age-graded influences, which are thought to be largely based on biology and age norms. Because the larger social forces that lead to age norms are of little interest, within-cohort regularities in behavior are explained solely by personal attributes (biology and institutionalized norms).

In the final analysis, the study of contextual influences in cohorts is hampered because it produces largely invariant patterns through such age-graded influences, or it cannot be studied because of its seemingly random nature. Some of these issues were dampened by the initial enthusiasm of Baltes for cohort studies and the analysis of interindividual differences in intraindividual change. But in retrospect, it appears that Baltes’s volume on cohort studies with Nesselroade in 1979 was followed by a decline in his regard for them. Nevertheless, some life-span investigators (e.g., Heckhausen, 1999) have continued to assess the link between broader social contexts and individual functioning across the life course. In the field of developmental science, there are numerous examples of this line of work, such as Silbereisen’s Jena research program on social change and human development, with its featured research on the impact of German Unification. We provide an overview of this research on pages 44–47.

### Social Relations: Roles and Sequences

The second column of Figure 2.1 refers to how an individual’s life pattern is structured by multiple role sequences, their transitions, and “linked lives.” Transitions into and out of social roles across the life span entail both social and personal changes in status and identity (Glaser & Strauss, 1971). Changes in major social roles, such as from living with parents in a dependent role and then moving to an independent household with a spouse, generally represent a change in life stage to the status of an adult. This process involves human agency in the selection of role options as well as social influences and constraints.



The life cycle represented a dominant model of the social life span from the early 1900s to the 1960s. In its most precise definition, *life cycle* refers to a sequence of roles in parenting, from the birth of children through their maturity and departure from the home to the birth of their own children. In a life cycle of generational succession, newborns are socialized to maturity, give birth to the next generation, grow old, and die. The cycle is repeated from one generation to the next in a human population (O'Rand & Krecker, 1990). As reproductive cycles, the life cycle can vary greatly in tempo through variations in the timing of childbirth, whether very early or late in life between the generations.

Role change in one generation has consequences across the generations, ascending and descending (Burton, 1985). When the eldest daughter has a child before the age of 13, her mother may become a grandmother before the age of 30 and a great-grandmother before the age of 50. A sequence of early childbearing across the generations weakens the generational and age foundation for family authority and social control. Family authority over a newborn child tends to shift upward from the teenage mother to the grandmother. By contrast, late childbearing slows the cycle and minimizes age similarities across adjacent generations. Entry into later-life relationships may provide the social control to stabilize a person's life and minimize involvement in unconventional and dangerous activities. In their Boston sample, Sampson and Laub (1993) reported that bonds to conventional figures provided a route of escape from delinquency for a number of men with a childhood history of delinquency.

During the familistic post-World War II years, the life cycle became well known as the family cycle, through the writings of Glick and Hill, as a set of ordered stages of parenthood defined primarily by variations in family composition and size (Elder, 1978). Major transition points included courtship, engagement, marriage, birth of the first and last child, the children's transitions in school, departure of the eldest and youngest child from the home, and marital dissolution through the death of one spouse. This sequence of life stages is based on a concept of marriage that bears children and remains intact up to old age and death. Deviant patterns are excluded, such as marriages without children, those preceded by children, the widowed and divorced whether with or without children, and serial marriages (see also Ganong, Coleman, & Russell, Chapter 4, this *Handbook*, this volume).

The emerging complexity of contemporary family life did not fit this concept of the life cycle. First, childbearing

has become increasingly uncoupled from marriage. Children are increasingly born prior to marriage or outside of marriage altogether. In the United States, the prevalence of divorce from the 1960s to the present has led to multiple families in a person's life and to the likelihood that most children will experience a single-parent household before they enter adulthood (e.g., Fussell, 2002). Even with these limitations, the life-cycle concept and its family cycle tell us much about the social matrix of one's life—the linked lives. They knit together a full array of family relationships through life stages and the generations, providing insight into family processes such as socialization and social control over the life span. They connect the developing person and his or her career.

Another feature of this complexity emerged as mothers increased their involvement in the labor force over the last quarter of the 20th century. This upward trend posed another limitation for the life-cycle framework and suggested the need for a dual career perspective to study these families and the lives of their members. However, even in the early 1970s, a prime era for life-cycle research, Young and Willmott (1973) found that studies of work and family were typically proceeding along separate paths with no substantial effort to investigate their interdependence and coordination problems. This observation contrasts rather strikingly today with a flourishing study of the interlocking trajectories of work and family life (Drobnic, Blossfield, & Rohwer, 1999; Moen, 2003). Life course models have been constructed to capture this dynamic.

In all of these ways, the life cycle of family roles entailed shortcomings in thinking about the life course of children and their parents. The temporality of age addresses some of these limitations by supplementing its relational approach with a temporal and contextual perspective. Entry into social roles in the life cycle may follow a certain temporal order, but these role transitions are not temporally located in a person's life. For example, a life-cycle model of a person's life might locate marriage before the first birth, but it would not indicate whether the marriage occurred at 20 or 40 years. The evidence suggests that event timing matters because social timetables, age norms, and age-graded sanctions influence behavior.

The concept of generation in the life-cycle perspective occupies a common historical location relative to historical events such as the economic recession that occurred between 1980 and 1983. A parent generation may have birth years that span 30 years, a period that could include eras of economic boom and bust in the 20th century. As such, it is apparent that generational role or position

cannot offer a precise way of connecting people's lives to changes in society, whereas age and/or birth year does offer such a perspective.

A social role-generation perspective and a temporal-contextual perspective based on age are complementary in thinking about the social life course embedded in a social-historical context. One of the best research examples of why this convergence is important comes from *The Polish Peasant in Europe and America* (Thomas & Znaniecki, 1918). This pioneering work was described in the 1960s as "the greatest single study done thus far by an American sociologist" (Nisbet, 1969, p. 316). The lives of immigrants embodied the discontinuities of the age; they were socialized for a world that had become only a memory. The societies they left and entered—the Old World and the New—presented contrasting pathways for individual adaptation and development. Matters of social and historical time are clearly relevant to this project, and yet, Thomas and Znaniecki were largely insensitive to them.

For many years, the social role/life cycle perspective continued to offer a valuable way of thinking about the social patterning and interdependence of lives, although limited in a number of respects that we have noted. In the 1970s, this approach was combined with new understandings of age to form life course models with the analytic virtues of both theoretical traditions: linked lives across the life span and generations, coupled with the temporality of age and context through an age-graded sequence of events and social roles, embedded in birth cohorts. These models were also enriched by life-span concepts of human development that feature the agency of individuals in constructing their lives.

### Age and the Life Course

A greater understanding of the meanings of age in people's lives during the 1950s and 1960s provided a way of thinking about the relation of historical location and its ecology to life patterns with its events and social roles across the life span. The link between age/birth year and historical time occurred in large part through the influential essay of Ryder (1965) on the cohort as a way of studying social change and its effects on people and populations. Riley et al. wrote a comprehensive work on this topic in *Aging and Society* (1972). This important volume relates birth cohorts and age-graded roles. Both Ryder and Riley provided conceptual models for this relatively undeveloped field of study at the time.

Before Ryder's essay on cohorts, the birth years of study members in surveys and longitudinal studies were most unlikely to be considered a way to locate people in history. Even the historical context of empirical studies received minimal attention (Thernstrom, 1964), although Bronfenbrenner (1958) demonstrated the importance of doing so by showing that the findings of two surveys of social class and childrearing made sense when one noted that they were carried out in different eras of the 20th century. Ryder's influential essay increased the sensitivity of social scientists to the historical context of lives and their birth cohorts.

In addition, the surge of newly initiated longitudinal studies provided a dynamic approach to age and its meanings across the life span. This fresh perspective on age reflected the pioneering work of Neugarten (Neugarten, 1968, 1996; Neugarten & Danan, 1973) at the University of Chicago's Committee on Human Development during the late 1950s and 1960s. Her work with colleagues revealed the variability of lives. People do not move across their lives in concert with others of the same age. They vary in the age at which they enter and leave key social roles.

In what follows, we more fully describe contributions to the two research traditions on age and the life course, the link between age cohorts and an age-graded perspective on life patterns. In combination, they bring temporality and context to a social perspective on the life course.

### A Cohort-Historical Perspective

Birth year or date of entry into a system such as school graduation locates the individual according to historical time and related social change. With age peers in the cohort, the individual is exposed to a particular segment of historical experience as he or she moves across age-graded roles. To grasp the meaning and implications of birth year and cohort membership, the investigator specifies the distinctive historical events and processes at the time as well as characteristics of the cohort, such as its size and composition. These characteristics are themselves a consequence of historical changes in birth and death rates, immigration, and migration.

As successive cohorts encounter the same historical event, they do so at different life stages, defined by social roles, maturity, and life experiences. This means that adjacent cohorts bring different life experiences to the change. Ryder (1965, p. 846) stressed this life-stage principle in his account of cohort differences in the life course. As each cohort encounters a historical event, whether depression or prosperity, it "is distinctively marked by the career

stage it occupies.” This mark may take different forms. One type of outcome involves cohort differences, such as the less adverse effects of hardship among the older Oakland boys in the Great Depression study than among the much younger Berkeley boys (Elder, 1974/1999). For another perspective, consider age at entry into World War II. The age range spanned 20 years: Some recruits were launching their adult lives, whereas others were in their mid-30s with families and careers.

In addition to cohort effects, history may take the form of a period effect when the influence of a historical change is relatively uniform across all age groups. Rodgers and Thornton (1985) found that marriage and divorce rates did not vary across the 20th century by age groups. On rates of marital dissolution, they observed that “the big picture is one of overwhelmingly historical effects that influenced all subgroups of the population substantially and surprisingly equally” (p. 29). Concerning divorce, they referred especially to the rising level up to the 1930s, the decline in the Great Depression era, a rapid recovery to the extraordinary peak of divorce in the mid-1940s, and then to the upward trend during the 1960s and 1970s. The precise explanation for such period influences was not determined.

When theory and research focus on the cohort level, the linking mechanisms between lives and changing times have been difficult to pin down. Cohorts can be merely “black boxes” with no information on causal dynamics and linkages. Speculation frequently takes the place of disciplined explication. Another issue concerns environmental variation within cohorts. Thus, some children may be exposed to the economic stress of a plant closing, whereas others are insulated from such stresses by their father’s different place of employment. In response to such heterogeneity, more studies are investigating specific types of differential social change within a single birth cohort (George, 2009).

*The age-graded life course.* During the late 1950s and early 1960s, Neugarten directed a research program that featured the concept of a normative timetable and individual deviations from age expectations. The timetable refers to the social meanings of age, as defined by people’s expectations regarding events and social roles. In theory, age expectations specify appropriate times for major transitions, and violations of them may lead to adverse consequences, from informal sanctions to lost opportunities. There is an appropriate time for entering school, leaving home, getting married, having children, and retiring from the labor force. With colleagues (Neugarten, Moore, & Lowe, 1965), Neugarten observed a high degree of consensus on age norms across some 15 age-related

characteristics in samples of middle-class adults. The data not only show a general agreement among men and women on the appropriate age for a woman to marry but also support the hypothesis that informal sanctions are associated with relatively early and late marriage. Moreover, the women were aware if they were on time, late, or early with respect to marriage and other major role transitions.

This pioneering line of research has been extended in fruitful ways by Settersten. He and Hagestad carried out a study of the perceived deadlines in both family and education/work transitions in the 1990s among men and women in the Chicago area (Settersten, 2003). A large majority of the respondents claimed that there were deadlines for this type of transition, but Settersten noted that the big challenge in this area is to clarify what is meant by the term *age norm*. Research on age norms has been limited by the fact that the identification of an age norm typically requires the observation of a relevant sanction—the two phenomena cannot be studied independently. Settersten also made the point that deviations from age expectations and timetables may entail consequences that have nothing to do with informal sanctions as we know them. A very late marriage, for example, increases the risk of childlessness.

For many decades, age-grades were inferred as possessing common significance for members without evidence of their meaning to these individuals. When do young people assume the perspective of an adult? Neugarten was one of the first developmentalists to pose such questions, and she did this work with a sample of adults during the 1950s. She found (see Neugarten & Peterson, 1957) that men with lower socioeconomic status tended to perceive a more rapid passage through the major age divisions of life than did middle-class men: Maturity, middle age, and old age came earlier in the lower SES strata, owing perhaps to class-linked laboring jobs and stresses. The men who relied on mental skills in a sedentary occupation foresaw a relatively long period of productivity, whereas the manual worker expected a relatively short span of productive activity, followed by retirement.

Contemporary studies of the meanings of age status have focused on the transition to adulthood. Entry into family roles (marital and especially parental) are typically most predictive of an adult definition of *self*, and this is what Shanahan, Mortimer, and Porfeli (2005) observed from a contemporary longitudinal study of the young adult transition in an urban sample of midwestern Americans. It is also the case that entry into these roles has been delayed significantly across the 20th century, owing in part to employment and advanced education opportunities.



Consistent with this interpretation, Americans in their 20s who perceived themselves to be relatively late in the transition to adulthood were found to be most committed to an advanced path of higher education in a national longitudinal study (Benson & Elder, 2011). Young people who defined themselves as adults ranked lowest in socioeconomic origin and educational plans. Similar to Neugarten and Peterson's finding of life course acceleration in later life among adults in the lower SES, these young people were following an accelerated subjective path to adult status.

Research on age and the subjective life course represents an example of how investigations of the meanings of age have opened up a way to think about identity in a context of changing roles across the life course. The sequence of age-graded roles and statuses depicts a social trajectory of the life course, and its transitions from one role to another that influence how young people view themselves and others.

### Converging Research Traditions in Life Course Theory

Contemporary theory on the life course and its social dimensions differs from the perspectives of an earlier era by joining the life-cycle processes of social relationships with the temporal and contextual aspects of age. In *Children of the Great Depression* (Elder, 1974/1999), the social role perspective was combined with the analytic meanings of age for linking family and individual experience to historical change, and for identifying age-graded trajectories across the life course. Both theoretical strands provide essential features of a social life course on matters of time, context, and process. The life course is age-graded through social institutions and structures, and embedded in relationships that constrain and support behavior. In addition, people are located in historical settings through birth cohorts and are linked across the generations by ties of kinship and friendship.

By integrating social relationship concepts and age-based distinctions on social trajectories, along with life-span concepts of the person, the life course framework offered a promising approach to the contextual study of human development in longitudinal samples (Figure 2.1). Both the individual life course and a person's developmental trajectory are connected with the lives and development of others. Life course theory thus took issue with life-span studies that viewed human development as an unfolding process that is not coactive with social and cultural processes in historical time. Moreover, the life course

paradigm is responsive to the call by Lerner (1991, p. 27) for more attention to contextual variability and represents a perspective in the field of developmental science (Cairns, Elder, & Costello, 1996) that extends across system levels and disciplines.

The contextual perspective of the life course framework has much in common with Bronfenbrenner's ecology of human development, now called bioecology theory (Bronfenbrenner & Ceci, 1994). His *Ecology of Human Development* (Bronfenbrenner, 1979) proposed a multi-level view of the sociocultural environment, from macro to micro, but it did not include a temporal perspective on individual development across changing environments. Some years later, Bronfenbrenner (1989, p. 201) noted this major lacuna in his work and proposed the concept of *chronosystem* with its three interacting components over time: (1) the developing person; (2) the changing environment; and (3) their proximal processes. This concept has not been widely adopted, but Bronfenbrenner's ecological perspective has appeared in numerous contextual studies of child development, especially in the field of neighborhood influences (Bronfenbrenner & Morris, 2006; Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume).

Human development in life course theory represents a process of organism-environment transactions over time in which the organism plays an active role in shaping its own development. The developing person is viewed as a dynamic whole, not as separate strands, facets, or domains such as emotion, cognition, and motivation. The course of development is embedded in a dynamic system of social interchanges and interdependencies across and within levels. As noted by Bronfenbrenner (1996), this dynamic in life course theory is illustrated well by the interlocking lives and developmental trajectories of family members who are influenced differently by their changing world. We turn now to perspectives and basic concepts that link the social life course and developmental processes.

## ELEMENTARY LIFE COURSE CONCEPTS AND PERSPECTIVES

For a study that is framed in terms of changing times and places, the objective is to link historical and spatial processes with individual development by examining multiple levels of the social environment (Elder & Russell, 2000). Starting with the macro level, societal change may transform social institutions, communities, and cultures,

and in so doing establish developmental constraints for choices and generate individual agency at the micro level. The multilevel nature of the life course and human development invites different points of entry, each with specific questions, ranging from cultures and social institutions to human biology and the genome (Shanahan & Porfeli, 2002). A single study commonly employs different entry points for aspects of the same project. Thus a project motivated by the impact of rural change on children's social and emotional development should be framed by an initial focus on the transformation of rural communities and the economic well-being and hardships of families within these communities. Such a study would be incomplete without reference to the adaptive patterns of parents and children: their developmental trajectories of behaviors, psychological profiles, and health.

Indeed, empirical studies of the farm crisis (1980 to early 1990s) in the United States, as it played out in central Iowa, tell us that the distinction between families engaged in farming versus families living in the small rural towns was key to linking social change and young people's lives. Parts of this study might also investigate the determinants of specific emotional or social outcomes and relevant protective resources in the family, a point of entry that centers on the developmental status of the child. Still other entry points might begin with the interchange of parents and child or with sibling relationships. Each point could become a framing statement for an independent study, although all entry points provide insight into a central guiding question about context. By studying diverse aspects of the same problem, the processes of social change and individual development give life to variables otherwise considered "social addresses," such as SES, sex, and ethnicity.

Considerable leverage in conducting such studies is provided by concepts and perspectives that bridge social change, place, and individual development, theoretical tools that reflect decades of empirical study. To understand this conceptual bridge, we turn to elementary concepts. First, we begin with multiple levels of the life course, ranging from institutionalized pathways to cumulative patterns of context, which shape the individual life course.

Developmental science is ultimately directed to the study of adaptive and maladaptive patterns of change and constancy at the level of the person. Yet institutionalized pathways provide a broad context for development and set the stage for cumulative patterns of social experiences that shape the individual's life course. Second, other temporally sensitive concepts—most notably, trajectory, transition, and turning point—are taken up with particular emphasis

**TABLE 2.1 Central Concepts of the Life Course: Social and Developmental Dynamics**

Conceptual Description	Examples
<i>Social Pathway:</i> Sequences of positions within and between institutions, organizations, and phases of life	Tracking within schools; occupational career ladders; transitions from school tracks to labor markets
<i>Duration:</i> Time spent in a social status or role, span of exposure	Years in poverty; years married
<i>Cumulative Effects:</i> Increasing effect of earlier experiences with the passage of time (akin to compounding interest)	Effect of education on health becomes stronger as people age
<i>Chains of Interrelated Events:</i> Sequences of risky or salutary experiences across development	Chain of risk: Life events often lead to further life-events; institutionalization in childhood increases likelihood of additional risks
<i>Social Trajectory:</i> Behaviors that likely coincide with pathways	Income stream from an occupational career line
<i>Developmental Trajectory:</i> Behavioral pattern over time, often associated with coinciding social patterns in context	Pattern of change in depressed affect through adolescence is associated with patterns of stressors during the same period
<i>Transitions:</i> Discrete change in social role, set of roles, or membership in social organization	Transition to first grade, to adulthood, to a new school
<i>Turning Point:</i> Change in social circumstances that markedly alters life course, often because of the meaning of the event	Transition to a new school may be associated with substantial improvement
<i>Knifing-Off Experience:</i> Turning point that renders earlier life course much less consequential	Military service can interrupt nascent antisocial career; marriage may have similar effect

on the properties of social transitions (see Table 2.1). Third, we focus on linking mechanisms that have proven highly useful in the study of change and place. Beginning with studies of children who were born before the Great Depression, research has revealed a set of mechanisms that link context and the individual life course and, as will be seen in subsequent sections, these mechanisms have proven highly probative in the study of place. The paradigmatic themes of life course theory draw on these elementary concepts and mechanisms, underscoring the socially dynamic basis for individual development.

### Social Pathways, Cumulative Processes, and Durations

Social pathways, cumulative patterns, and the duration of experiences represent dynamic views of context. Pathways typically refer to sequences of social positions in and between organizations, institutions, and phases of life. Institutionalized pathways generally have specified time

boundaries, what Merton (1984) called “socially expected durations.” Children who are held back in school become aware of their lagging status on the educational ladder (Alexander, Entwisle, & Dauber, 1994), and company managers talk about the relation between age and grade in prospects for promotion to senior rank (Sofer, 1970, p. 239). A growing body of research also considers early entry into adult roles—what Burton (2007) aptly called “adulthood”—as well as pathways into retirement (Kim & Moen, 2002). Whether a new phase of life, emerging adulthood, now characterizes pathways into adulthood is a lively topic of inquiry (Bynner, 2005).

In addition to their age-graded nature, pathways structure the direction that people’s lives can take. Pallas (2003, p. 168–169) observed that pathways have distinct features that govern how strongly people’s trajectories and behaviors are shaped, including, for example, the number of options a pathway leaves open in the future, the extent of mobility that is likely to be experienced, stigma and extrinsic rewards, and the importance of personal choice. Some pathways provide future opportunities and chances for upward mobility based on personal motivation, whereas others effectively block promising avenues irrespective of one’s efforts. Importantly, these pathways reflect social arrangements as found, for example, by McFarland (2006) in how a particular high school chooses to implement a math curriculum.

Pathways are also multilevel phenomena reflecting arrangements in place at levels of culture, the nation-state, social institutions and organizations, and locale. To varying degrees, people work out their life course in established or institutionalized pathways. At the macro end of this multilevel system, governments generally establish pathways (Leisering, 2003). At micro levels, institutional sectors (economy and education) or local communities (school systems, labor markets, and neighborhoods) guide the pathways. Each system level, from macro to micro, socially regulates, in part, the decision and action processes of the life course, producing areas of coordination or discord and contradiction (e.g., marriage, divorce, and adoption laws). At the primary level of the individual actor, some decision pressures and constraints are linked to federal regulation, some to the social regulations of an employer, and some to state and community legislation.

Mayer (1986) had the nation-state in mind when he identified important societal processes, “which impose order and constraints on lives” (pp. 166–167). These include the cumulative effects of delayed transitions, institutional careers, the historical circumstances associated with

particular cohorts, and state intervention. Growth of the state in social regulation counters the modern tendency toward individualism. At the personal level, the state “legalizes, defines and standardizes most points of entry and exit: into and out of employment, into and out of marital status, into and out of sickness and disability, into and out of education. In doing so, the state turns these transitions into strongly demarcated public events and acts as gatekeeper and sorter” (p. 167). To be sure, each nation-state represents a unique configuration of laws, rules, and norms that structure the life course. Viewed from this vantage point, cross-national and historical studies become highly strategic in studying societal forces and individual lives and indeed they have become increasingly common as diverse countries collect data containing the same information. The Panel Study of Income Dynamics in the United States (launched in 1968) has become a model for nationwide longitudinal studies in Europe, as in Great Britain and Germany.

Multilevel accounts of the life course are well illustrated by studies of the transition to adulthood (Settersten, Furstenberg, & Rumbaut, 2005), which highlight how changing institutional arrangements and cultural understandings shape pathways by comparing and contrasting different countries and historical periods. Billari noted that such comparisons are especially powerful among European countries. Each has distinct socioeconomic, political, and cultural features and yet, particularly with the formation of the European Union, they have a growing sense of common identity (Billari & Liefbroer, 2010). His empirical work suggests that the transition to adulthood is becoming increasingly prolonged and diverse (e.g., increasing childbirth outside of marriage), but that this “European pattern” is clearly in evidence in northern Europe and is now diffusing across the rest of the continent. Studies may also examine changing societal arrangements by taking a historical view within a circumscribed geographical area (e.g., Bras, Liefbroer, & Elzinga, 2010).

Within this broader literature on the transition to adulthood, much attention has been paid to transitions from secondary school to work because of its dramatic variability across countries and serious consequences for economic growth and income trajectories for people (Kerckhoff, 2003; Marshall, Heinz, Kruger, & Verma, 2001). For example, considerable structure is provided working-class German youth in a secondary-level system that in theory joins industrial training and education in an apprenticeship system. In principle, placement in a skilled craft is assured for youth who complete their

apprenticeships. American adolescents encounter the least amount of articulation between schooling and workplace. Vocational training in secondary schools is not closely linked to specific industries, their recruitment, and skill needs. In many less-developed countries, youth are forced to leave school early to support their families; in turn, their lowered educational attainment results in low wages, which forces their children to leave school early as well (Shanahan et al. 2002). This intergenerational cycle of disadvantage illustrates how pathways from school to work can reproduce across the generations.

Prior to entry into work, however, young people encounter educational pathways. As with career lines, pathways of education have been institutionalized in historical time, extending through later grades and into college (Shanahan, Miech, & Elder, 1998). Perhaps problematically, vocational training after high school is often not considered desirable for students, unlike the situation found in many European countries. Studies of the educational system in the United States reveal that these pathways begin very early in life and that their effects cumulate to produce marked differences among students and workers. Thus—drawing on data from the Beginning School Study in Baltimore—Entwisle, Alexander, and Olson (2003) documented educational pathways that begin to take form in the first grade. In a school where 88% of the students were on subsidy, every first grade student received a failing mark in reading in the first quarter. In low-SES schools more generally, the average first grade reading score was 1.64 (below a C), in contrast to students in high-SES schools, who averaged 2.15 (above a C). Even controlling for family background and standardized test scores in this Baltimore study, African American children received lower first-grade reading and math scores, and these ethnic differences were subsequently magnified.

Although students of all ethnicities and SES groups benefited from schooling to the same degree, low-SES students' reading ability decreased during the summer vacation, whereas high-SES students' reading improved. Given initial differences in reading and math ability and these invidious summer trends, Entwisle et al. (2003) concluded that "the long-term persistence of early rankings means that inequities visible in the first grade translate into deficits all along the line" (p. 239). Indeed, recent studies drawing on this sample show that first grade attributes—including temperamental factors, grades, and standardized test scores—predict educational attainments at age 22 (Entwisle, Alexander, & Olson, 2005; see also Kerckhoff, 1993).

Research also suggests the importance of organizational characteristics of schools for educational pathways and their implications for human development. As Eccles (2004) observed, schools are multilevel systems reflecting macro-regulatory systems (national, state, and local laws and policies) and "mini-regulatory" systems, including, for example, the school as a formal organization and networks of teachers (see Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). At the level of the high school, sequences of courses define educational career paths. Drawing on this insight, McFarland (2006) found that different high schools generate different patterns of "curricular flows" as students progress through math courses. One school exhibited a differentiated ability model, whereby students progressed according to their ability and had options to continue in math should they encounter failure. Another school showed a different pattern, "upstream and out," whereby students either succeeded and continued in their math courses, or dropped from the sequence altogether.

Ideally, studies of the developmental consequences of life course change take into account the potential constraints and options associated with particular pathways. McFarland (2006) observed that curricular flows rendered students as "constrained agents" who had goals and ambitions but were ultimately enabled and constrained by the organization of their school's curriculum. And as Eccles's Person-Environmental Fit Model details, the developmental status of the student conditions the effects of pathways and their experiences (Eccles et al., 1993). Thus, the study of pathways and development calls for detailed attention to reciprocal patterns between structures of opportunities and constraints, and the capacities of the student.

Social pathways often bring with them cumulative processes, which refer to the growing implications of earlier experiences for later outcomes. The defining feature of accumulation is that the effects of earlier differences are magnified when predicting future behaviors, very much like compounding interest leads to an exponential growth in savings (DiPrete & Eirich, 2006). Accordingly, cumulative processes suggest that the effects of small differences earlier in development "grow" according to some exponential function over the life course (Alexander, Entwisle, & Olson, 2014). Some evidence suggests the cumulative effects of early unemployment on future earnings (an effect referred to as *scarring*), and of early disadvantage for obesity and other aspects of health. For example, the effect of education on future self-rated health is time compounding, with poorly educated people



showing increasingly lower self-rated health through adulthood (Willson, Shuey, & Elder, 2007). However, there is surprisingly little evidence for cumulative processes in the sense of compounding interest, and a wide variety of model specifications remain completely untested (DiPrete & Eirich, 2006; Ferraro, Shippee, & Shafer, 2009).

Cumulation depends on duration, the span of time between changes in state. However, not all durations have cumulative effects. Some experiences persist, but their implications are best understood as linear. Furthermore, the full implications of long and short exposures to a situation depend on the nature of the situation itself. The concept of duration has been especially influential in studies of the permanence of marriage and employment, and the effects of stressors, SES, and poverty. For example, is divorce preceded by a lengthy period of family conflict? Little is known about the qualitative nature of experiences of long and short durations, although a lengthy involvement tends to increase behavioral continuity through acquired obligations, investments, and habits (Becker, 1964). The longer the duration of marriage, for example, the greater the chances for marital permanence (Cherlin, 1993); alternatively, marital happiness is likely to decline at all marital durations, with accelerated declines occurring during the earliest and latest years of marriage (Van Laningham, Johnson, & Amato, 2001). Much more needs to be known about the quality of marriages of differing durations (Teachman, 2008) and their development implications.

A particularly telling example of the complexity of durations and their potential meaning is found in Mortimer's 2003 St. Paul longitudinal study of adolescent employment (Staff, Mont'Alvao, & Mortimer, Chapter 9, this *Handbook*, this volume). With monthly educational and employment data, Mortimer and her colleagues developed a typology of work patterns through high school based on duration (whether the student worked more than 18 months through the 48 months of high school) and intensity (during periods of employment, whether the student worked, on average, more than 20 hours per week). Mortimer, Staff, and Oesterle (2003) showed that ninth graders with higher educational promise—as indicated by grades and aspirations—opted for less intensive work. Low intensity workers were also more likely to save their earnings for college. In turn, “steady workers” (high duration, low intensity) are more likely to earn a BA degree within 9 years of high school graduation than high duration-high intensity workers. Indeed, among students with low levels of educational promise, those who chose a steady work

pattern were more likely to receive their BA than their low promise, high-duration/high-intensity counterparts. Such findings suggest that work of differing durations and intensity has distinct meanings and consequences and highlights the misleading nature of cross-sectional studies.

Many processes refer not to the duration of a particular social circumstance but rather to the triggering of chains of interrelated events, which have significant implications for later well-being and attainment (Rutter, 1989). Behavioral continuities across the life course are likely to be found in social interactions that are sustained by their consequences (cumulative) and by the tendency of these styles to evoke maintaining responses from the environment (reciprocal) (Caspi, Bem, & Elder, 1989). In cumulative continuity, both individual dispositions and family values are likely to favor the choice of compatible environments, which reinforces and sustains the match. Thus, antisocial youth tend to affiliate with other problem youth, and their interaction generally accentuates their behavior, producing over time what might be described as cumulative disadvantages (Cairns & Cairns, 1994; Sampson & Laub, 1997; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Reciprocal continuity refers to a continuous interchange between person and environment in which reaction forms action and then by another cycle of action and reaction. As with cumulative continuity, the net result of reciprocal continuity is the cumulation of experiences that tend to maintain and promote the same behavioral outcome. Baldwin (1895) referred to such interchanges as “circular functions” in ontogeny. The ill-tempered outburst of an adolescent may provoke a cycle of parental rage and aggression, a widening gulf of irritation, and, finally, parental withdrawal, which reinforces the adolescent's initial aggression (Pepler & Rubin, 1991). Over time, the interactional experiences of aggressive children can establish attitudes that lead them to project interpretations on new social encounters and relationships, thereby ensuring behavior that affirms the expected behavior. Aggressive children generally expect others to be hostile and thus behave in ways that elicit hostility, confirming their initial suspicions and reinforcing their behavior.

A growing body of evidence raises questions about the mechanisms that link early social experiences—particularly forms of inequality—with later health and well-being (Power & Hertzman, 1997). Drawing on the Dunedin sample, for example, Poulton et al. (2002) show that children's SES (based on occupational categories) is an important predictor of physical health at age 26 even with their adult SES controlled. Children growing up in

households marked by low SES conditions have poorer health—defined, for example, by the body-mass index and cardiorespiratory fitness—when compared with children who grow up in high SES households, regardless of the children’s adult SES. The mechanisms that link such early experiences with later physical well-being are not well documented, although plausible mechanisms include health-related behaviors, especially during adolescence (Bauldry, Shanahan, Boardman, Miech, & Macmillan, 2012). The larger point, however, is that there is now abundant evidence that social pathways, cumulative processes, and durations are notably associated with human development, although mechanisms that link these dynamic social experiences and the individual are typically not well-understood.

### Trajectories, Transitions, and Turning Points

Social pathways and cumulative experience present temporally sensitive descriptions of context. Social trajectories provide a dynamic view of behavior and achievements, typically over a substantial part of the life span. Transitions refer to a change in state or states such as when youth leave home. A substantial change in the course of a behavioral trajectory, often during transitions, may represent a turning point.

Trajectories and transitions are elements of established pathways, their individual life courses, and developmental patterns. Among individuals, social roles evolve over an extended span of time, as in trajectories of work or family; and they change over a short time span. The latter may be marked by specific events, such as children entering school for the first time, completing the first grade successfully, and graduating from high school. Each transition, combining a role exit and entry, is embedded in a trajectory that gives it specific form and meaning. Thus, work transitions are core elements of a work-life trajectory, and births are important markers along a parental trajectory.

Trajectories and transitions refer to processes that are familiar in the study of work careers and life events. The language of careers has a distinguished history in the field of occupations and the professions, and it still represents one of the rare languages that depict a temporal dimension or process. Career lines, as pathways, refer to sequences of positions, and careers, as trajectories, refer to coinciding behaviors and achievements. Work careers have been defined as disorderly and orderly, and achievements have been represented as career advancement, whether early or late, rapid or slow (Wilensky, 1960). The term

*career* also has been applied to the trajectories of marriage and parenthood (Hill & Foote, 1970). All of these uses fall in the more inclusive definition of a life course trajectory. The term does not prejudge the direction, degree, or rate of change in its course.

Developmental trajectories are also integral to life course theory, especially when they are studied as interdependent with the changing dynamics of social trajectories (George, 2009). In a four-wave study of early adolescents, based on growth-curve models, Ge, Lorenz, Conger, Elder, and Simons (1994) found that (a) the trajectories of depressive symptoms increased sharply among European American girls, surpassing the symptom level of boys at age 13; (b) the increase for girls was linked to their exposure to an increasing level of negative events; and (c) the initial warmth and supportiveness of a mother minimized the subsequent risk of depressed states and negative events among daughters. Studies such as these have inspired many efforts to interrelate developmental trajectories and context, although frequently neglecting the changing nature of social circumstance. Increasing attention is being devoted to the study of classes of behavioral trajectories based on the supposition that people may be qualitatively distinct in their developmental patterns (Bauer & Curran, 2004).

According to this perspective, the population is heterogeneous with respect to behavioral trajectories; as such, distinct subgroups can be identified, and their covariates examined. Perhaps most famously, Moffitt (1993; see also Moffitt, Caspi, Harrington, & Milne, 2002) hypothesized that aggregate patterns in antisocial behavior conceal two distinct groups: (1) a small percentage of youth engaged in antisocial behavior at every stage of life (“life-course persistent”) and (2) a larger percentage of youth engaged in antisocial behavior during adolescence only (“adolescence-limited”). Indeed, drawing on semi-parametric models, researchers have uncovered evidence for unique trajectories of antisocial behavior (e.g., Nagin & Land, 1993). With greater use of such models there has been increasing appreciation for methodological issues (see Bauer & Curran, 2003 and accompanying exchanges; Eggleston, Laub, & Sampson, 2004; Nagin, 2004) and theoretical nuance that complicate the search for qualitatively distinct types of behavioral trajectories. Nevertheless, this approach raises exciting possibilities for linking behavioral patterns with change and stability in context and experience.

The multiple role trajectories of life patterns describe strategies of coordination or synchronization. Various demands compete for the individual’s or family’s scarce

resources such as time, energy, and money. Goode (1960) argued that an individual's set of relationships is both "unique and over-demanding," requiring strategies that minimize demands by scheduling and rescheduling transitions where possible. To cope with simultaneous, linked trajectories, the scheduling of events and obligations becomes a basic task in managing resources and pressures. The needs of children and financial requirements, for example, play important roles in determining work and leisure options.

The meaning of a transition has much to do with its timing in a trajectory. Consider the case of parenthood: the earlier the event, the greater the risk of social and health disadvantages for mother and child (Furstenberg, Brooks-Gunn, & Morgan, 1987). Early life transitions can have developmental consequences by affecting subsequent transitions, even after many years and decades have passed. They do so through behavioral consequences that set in motion cumulative advantages and disadvantages, with radiating implications for other life domains. A Baltimore study of adolescent mothers who were followed from 1966 to 1984 (Furstenberg et al., 1987) showed that variations in personal resources (e.g., IQ) during adolescence affected their economic success by influencing how they timed and ordered early events from marriage to education or employment. From the vantage point of this study, the quality of transition experiences early in life may foretell the likelihood of successful and unsuccessful adaptation to later transitions across the life course.

Transitions to parenthood during adolescence in the Baltimore panel raise another important general distinction: Life transitions can be thought of as a succession of mini-transitions or choice points. The transition from marriage to divorce is not simply a change in state, but begins with disenchantment and extends across divorce threats, periods of separation, and the filing of divorce papers. Different causal factors may operate at each phase of the process. "Origin" influences that increase the risk of disenchantment are likely to differ from those that sustain the process toward marital dissolution. In like manner, we can think of the transition to motherhood in adolescence as a multiphasic process in which each phase is marked by a choice point with options and social constraints. Developmentalists tend to view transitions as discrete events that occur in a relatively short period. Consequently, very little is known about the sequence of mini-transitions leading to full transitions.

The apparent contrast between institutionalized transitions and personal, idiosyncratic "transition experience"

can misrepresent reality. In many cases, life transitions are an institutionalized status passage in the life course of birth cohorts and a personalized transition for individuals with a distinctive life and social history. The latter may represent an individual working out of the former. These faces of a transition apply to the normative transitions of life, from birth to school entry, marriage, parenthood, and retirement. Transitions of this kind may seem more predictable and structured than non-normative events, but all transitions can be sorted according to their extent of structures or degree of external regulation, duration, timing, predictability, and novelty.

Life transitions into different environments facilitate this process by representing potential turning points in a trajectory for a troubled life course. Such turning points are sometimes referred to as "knifing off" past experiences, which can allow for new opportunities and behavioral patterns. One example of a turning point is the desistance from criminal activity, a knifing-off experience that involves a transition into new situations that provide monitoring, social supports, growth experiences, and the emergence of a new self-identity (Laub & Sampson, 2003). Military service, gainful employment, and marriage are all new role commitments that provide opportunities for a break from the past and social integration (see also Bouffard & Laub, 2004).

A further example of turning points—this time in an educational trajectory—is found in a study of feeder patterns into high school (Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). In the U.S. school system, pathways between middle school and high school are structured in different ways, affecting the proportion of one's middle school classmates who attend the same high school. Schiller's (1999) study of how differing feeder patterns affect subsequent grades is revealing. Among students receiving mostly Cs in middle school, high school math grades decrease as the proportion of one's classmates in the same high school increases. The reverse is true among students receiving mostly As in middle school: High school math grades increase as the proportion of one's classmates in the same high school increases. As Schiller notes, when middle school students disperse into many high schools, opportunities seem to open up for students at the bottom, as peer networks are disrupted. Consistent with a turning point, the old social world is knifed off and new opportunities for growth and identity change present themselves.

The concept of turning point also applies to the particular way people view their life trajectory—a subjective account of lived experience involves some degree of



change in situation, behavior, or meaning. Maruna's (2001) interview study of desistance among ex-convicts is one of a few research efforts to investigate the changing nature of the self during a turning point. Important themes in the life narratives of desistors include acknowledging past crimes, understanding their genesis, and recasting the self as in control and with newfound purpose. Clausen (1995) used detailed analyses of life histories to assess the subjective turning points of people who have been part of a longitudinal study for 60 or more years. Based on this work, he concluded that "one's life does not have to take a different direction for a person to feel that a turning point has occurred. But one must have a feeling that new meanings have been acquired, whether or not life experiences are much changed" (p. 371).

Similarly, Reynolds and Turner (2008) showed that the implications of life-events for mental health depend very much on their meaning to the individual. Life-events that call into question basic understandings of one's life (or assumptive states) have a much bigger effect on depressive symptoms than do life-events not so classified. And as McLeod (2012) observed, stressors of all manner can trigger distress depending on their meaning; in turn, the source of the individual's meaning is found in social and culture structures that characterize a time and place. Across different societies—and within societies, across historical periods—the same events are viewed as more or less stressful depending on changing institutions and cultural meanings.

### Social Change and Life Transitions

The concepts reviewed in the previous section provide ways of thinking about social change and its implications for human development. Accordingly, social change refers to a broad range of transitional phenomena such as residential moves or a change of school. Additional contributions to this perspective come from mechanisms that link transitions and life patterns to historical change and from paradigmatic principles that define the life course as a theoretical orientation. As a whole, these linking mechanisms—life stage, situational imperatives, control cycle, and accentuation principle—represent different understandings of the connections among individual lives, transitions in the life course, and the changing social world. These mechanisms are embedded in a theoretical framework defined by paradigmatic principles of the life course. Consider, for the example, the principle of human development and aging as a lifelong process. The sequence

of role transitions in the life course establishes different life stages, such as leaving home for kindergarten and its peer group experiences. This transition accentuates initial student differences in preparedness and maturity; and the situational imperatives of the classroom call for conformity to classroom standards of behavior. Teacher control in the classroom orients individual student efforts toward greater self-regulation on the part of the child. Each educational transition contributes to a cumulative developmental and social process.

The paradigmatic principles draw on these mechanisms in charting the perspective of life course study—the principles of lifelong development and aging, human agency in making choices, the importance of timing in lives, linked lives, and historical time and place (Elder, 1998b). These principles represent more general theoretical themes that collectively define the analytical scope of life course theory. The mechanisms refer to why the effects of transitions differ in populations, whereas the principles apply beyond the scope of transitions, to properties of the life course as a sequence of age-graded roles.

### Linking Mechanisms

The Depression studies focused on differences between cohorts born at opposite ends of the 1920s; because of their differing birth years, these young people occupied different life stages when the economy collapsed.

#### *Life-Stage Principle*

The life-stage principle holds that young people of different ages are likely to be exposed to the same slice of history but at differing points in development, creating unique patterns of social change and, at the level of the person, opportunities, challenges, strengths, and vulnerabilities. Viewed differently, children in the same family experience social changes in differing ways because of their differing ages. Indeed, the Oakland children passed through adolescence during the worst years of the Great Depression, but the Berkeley children became teenagers in World War II. Consequently, job scarcity, financial pressures, and emotional stress represented defining features of the Oakland cohort's transition from childhood to young adulthood. By contrast, members of the Berkeley cohort were exposed to the "empty households" of World War II when older parents worked from sunrise to sundown in home-front industries.

Consider the Berkeley males who entered the Great Depression when they were highly dependent on family

nurturance and vulnerable to family instability. Economic hardship came early in their lives and represented a prolonged deprivational experience, from the economic valley of the 1930s to the war years and departure from home. By comparison, the Oakland males were older and more independent when hardship hit their families. They assumed important roles in the household economy and entered adulthood with a more crystallized idea of their occupational goals. Despite some handicaps in education, they managed to end up at midlife with a slightly higher occupational rank (Elder, 1999). The vulnerability of the younger Berkeley boys is consistent with the results of other studies that show that family stressors are especially pathogenic for males in early childhood (e.g., Rutter & Madge, 1976).

### *Situational Imperatives*

Another linking mechanism involves situational imperatives, the behavioral demands or requirements of a new situation. The more demanding the situation, the more individual behavior is constrained to meet role expectations. In emergency family situations, helpful responses become an imperative for members, as in hard-pressed families during the worst years of the Great Depression. Rachman (1979) referred to these imperatives as “required helpfulness.” The Oakland children were old enough in the early 1930s to be called on to meet the increased economic and labor needs of their family, and a large number managed to earn money on paid jobs and to help in the household. This money was often used to cover traditional family concerns such as school expenses.

In deprived families, girls generally specialized in household chores and boys were more often involved in paid jobs. This gender difference made girls more dependent on the family and generally fostered greater autonomy among boys. Adolescent jobs in the 1930s typically included what might be regarded as odd jobs in the adult world, from waiting on tables and clerking to delivering newspapers and running errands. Employment of this kind may seem developmentally insignificant, although it had the important implication that people counted on them—they mattered. Indeed, staff observers rated the working boys as more energetic and efficacious than nonworking boys. The flow of influence was no doubt reciprocal. The more industrious were likely to find jobs and success in work that would reinforce their ambition. With additional chores at home, working boys experienced something like the obligations of adult status. To observers who knew them, they appeared to be more adult-oriented

in values, interests, and activities when compared to youth who did not have jobs.

### *Control Cycles*

Situational imperatives are elements of new situations that characterize control cycles, which, as described by Thomas (see Elder & Caspi, 1988), refer to changing relations between expectations and resources that affect a sense of personal control. A loss of control stems from a process in which resources fall below expectations. This change motivates efforts to restore control by adjusting expectations, resources, or both in terms of their relation. During the Great Depression, heavy income loss tended to affect children, sometimes adversely, through family adaptations to such deprivation. These include the reduction of family expenditures, the employment of more family members, and the lowering of living standards (Elder, 1974/1999). Equilibrium in these financially strained families was achieved when expectations matched resources. The psychology of this cyclical process is well described by what Brehm and Brehm called *reactance* (1982). Feelings of reactance occur whenever one or more freedoms or expectations are threatened or eliminated. Such emotions spur efforts to regain or preserve control. “It is the threat to control (which one had) that motivates an attempt to deal with the environment” (p. 375). Once control is achieved, expectations may be raised, thereby setting in motion another round of equilibrating initiatives.

### *Accentuation*

The final mechanism, known as the accentuation dynamic, relates transition experiences to the individual’s life history of past events, acquired dispositions, and meanings. When a transition heightens a prominent attribute that people bring to the new role or situation, the change is said to be an accentuation effect. Entry into new roles or situations is frequently an accentuation dynamic that tends to amplify “preexisting” behaviors. From this perspective, early transitional experiences become prologues for adult transitions that increase heterogeneity over the life course. We see this development in longitudinal studies of divorce and their increasing attention to behavioral changes initiated by it across the life course and the generations (Amato, 2000; Amato & Cheadle, 2005). In children, as well as adults, the divorce transition appears to accentuate dispositions that were present well before the event itself. For example, boys with behavior problems after a divorce were frequently engaged in problem behavior before the divorce.

TABLE 2.2 Mechanisms Linking Transitions to Development

Principle	Examples from <i>Children of the Great Depression</i> (Elder, 1974/1999)
<i>Life Stage</i> : The effects of social change are contingent on the age of the person experiencing it.	Differing effects of the Great Depression were observed among members of the Oakland (older) and Berkeley (younger) cohorts.
<i>Situational Imperatives</i> : Social demands of new situations shape appropriate behavior for the context.	During economic crisis, each member of the household was expected to make role-specific adjustments to scarcity and contributions to household economy.
<i>Accentuation</i> : Behavioral patterns before transition are magnified with social change.	Irritable fathers tended to lose their tempers under the pressures of economic deprivation.
<i>Control Cycles</i> : When confronted with new situations and loss of control, people strive to reassert control over their setting and biography.	During the Great Depression, families developed strategies to adapt the household economy.

As a whole, these linking mechanisms—life stage, situational imperatives, accentuation, and control cycles (Table 2.2)—represent different understandings of the connections among individual lives, transitions in the life course, and the changing social world. These mechanisms are embedded in a theoretical framework defined by paradigmatic principles of the life course.

### Paradigmatic Principles

Like the mechanisms reviewed in the previous section, the paradigmatic principles emerged from studies of *Children of the Great Depression* (Elder, 1974/1999) and subsequent research (Elder, Johnson, & Crosnoe, 2003). Collectively, they define *life course* as a theoretical orientation that provides a framework for studying phenomena at the nexus of social change, social pathways, and developmental trajectories.

#### *The Principle of Life-Span Development*

Human development and aging are life-long processes. Over the years, the life span has been represented as a sequence of life stages, from infancy and early childhood to old age. Each stage became an age-specific domain for specialized study. However, we recognize now that developmental and aging processes are most fully understood from a life-long perspective (Kuh, Power, Blane, & Bartley, 1997). Behavioral patterns at midlife are not only influenced by current circumstances and by the anticipation of the future, but also by prenatal and early

childhood experiences and, in some instances, by intrauterine experiences and the circumstances of prior generations. Long-term studies are documenting the relation between late-life adaptation and the early years of life-span development. Life course epidemiology has experienced explosive growth, as the precursors to adult health are explored among early sensitive periods, chains of risk, cumulating disadvantages, and their temporal complexities extending over many decades of life (Kuh & Ben-Shlomo, 2004; Bauldry et al., 2012). Such research has been propelled by national longitudinal studies of birth cohorts in Great Britain, marked by birthdates of 1946, 1958, 1970, and 2000. These cohorts are all scheduled to be followed into the later years of life (Ferri et al., 2003).

This long-scale temporal frame poses major challenges as well as exciting opportunities. The longer a life is studied, the greater the risk of exposure to social change. The lives of people in their 80s or 90s are thus most likely to reflect the particular contours of a society, with its unique pattern of social changes occurring over many years. In this sense, each birth cohort will result in distinct biographical patterns. Longitudinal data archives generally lack adequate information on social change, however, particularly in the details of social relationships, social organizations, and residential ecologies. Indeed, many longitudinal data collections do not extend beyond the respondent's self-reports, making nuanced understandings of the person's social setting very difficult. With increasing frequency, geographic codes are enabling investigators to assess contextual changes and their effects on lives.

Another challenge posed by the principle of life-long development and aging centers on the reality that each study typically begins “midstream” in the lives of respondents. Studies of adolescent behavioral patterns typically begin at some point during that phase of life, but such studies come with the strong assumption that what happened in the first decade of life is of negligible consequence. Given the strong tendencies toward behavioral continuity—often reflecting continuity of social settings—the researcher may be attempting to explain small amounts of behavioral change. This challenge may be especially acute for studies of the later life course, when decades of experiences—largely unmeasured—are not available for study. The point is well illustrated by a study of mastery among the elderly (Pearlin, Nguyen, Schieman, & Milkie, 2007). Mastery in old age reflects intractable hardships in early life, status attainment processes through adulthood, and stressors in old age. However, all of these factors are mediated by a sense of life course mastery,

the belief that one has directed and managed her or his life across the decades. Ideally, such complexities would be studied with data extending from childhood to old age.

Transitional experiences across the life course involve individual initiatives, situational constraints and opportunities, the dispositions and prior experiences that people bring to new situations, and the influence of others. Although many factors influence lives, young people play an important role in constructing their own lives though the choices they make.

### *The Principle of Human Agency*

Individuals construct their own life course through choices and actions they take within the opportunities and constraints of history and social circumstance. Elements of human agency have been prominent in studies of lives (see Haidt & Rodin, 1999; Thomas & Znaniecki, 1918) and are central to studies that relate lives to broader social contexts. People make choices in constrained situations that enable them to exert a measure of control over their life course. These choices ensure a degree of loose coupling between social transitions and life stages. Even during the economic turmoil and distress of the 1930s, families engaged in many strategies in the face of severe constraints: Mothers found jobs amid scarce options, and many of their children carried responsibilities in the home and community.

In *American Lives*, Clausen (1993) focused on the question of agency in lives, with emphasis on the formative adolescent years of Californians who were members of the Oakland and Berkeley Guidance studies. He hypothesized that competent adolescents who think about the future with a sense of personal efficacy are more effective in making sound choices and in implementing them during the transition to adulthood. These more “planful decisions” lead to greater success in work and family through adulthood. Indeed, the highly competent males in adolescence were most likely to achieve a successful start through education, occupational careers, and family, apart from the influence of IQ and SES background. Moreover, this beginning anticipated achievements across the life course, even into the 60s. The young men with a planful competence were more likely to have stable marriages and careers and tended to find satisfaction and fulfillment during their final decades.

Do these findings reflect the special circumstances of the study members’ early adult years—the beginning of World War II and an unparalleled era of prosperity? Postwar benefits for veterans encouraged them to obtain a college education, but what if we stepped back a decade

of two so that both a Great Depression and global war loomed ahead? To do this, we turned to the Lewis Terman data archive (Holahan & Sears, 1995), a longitudinal study of the brightest Californians. This study of talented children was launched in the 1920s, a time when California’s economy seemed to offer unlimited opportunity. Half of the children were born before 1911, the other half by the early 1920s. By selecting only the most able of California’s children for the study, Terman could direct his attention to great promise and the expected rise of talent to positions of accomplishment and leadership.

But history changed this trajectory (Shanahan & Elder, 2002; Shanahan, Elder, & Miech, 1997). The older cohort had completed most of its post-high school education by the time of the stock market crash and looked ahead to a stagnant and declining labor market, whereas the younger men faced the prospects of going to college in the later years of the Depression decade. Lacking good job prospects, a substantial number of the older men stayed in graduate school, extending their list of degrees. By contrast, World War II reduced significantly the educational opportunities of the younger men, but having no impact on the education of the older men who were well past the college years.

With these different historical paths in mind, it is not surprising that planful competence in adolescence had much greater relevance for the future of the younger men, when compared to the older cohort. The planfulness of the older men in adolescence had no effect on their chances for advanced education and career achievement. In large part, this outcome reflects the process of “warehousing” in which the young prolong their stay in school during economically troubled times. School persistence had less to do with personal motivation than with a way of getting out of hardship situations. Parallels between the Terman studies and early 21st-century cohorts of young people completing their educations are striking. Unprecedented numbers of young people around the world are completing university degrees, only to find little opportunity in the labor market. The Terman studies suggest a disabling, to some degree, of their sense of agency, as their adult lives reflect a lack of meaningful opportunities in the workplace. Yet many people will retain a high sense of agency even in the face of such challenges, a form of resilience that has not been adequately studied to date.

The constraints of social structures on agency extend beyond societal change, and powerfully reflect dynamics within the family and among peers. Bozick, Alexander, Entwisle, Dauber, and Kerr (2010) examined educational expectations from the fourth grade onward. Although



many studies of college planning begin with high school students, the authors found that by the fourth grade, most students were planning and expecting to attend college. Between the fourth grade and high school, many students remained steadfast in their plans, reflecting the socioeconomic advantages of their parents. Yet many students drifted away from college plans, and most of these students came from low-SES households. By high school—when most studies of college expectations begin—these processes were by and large complete, and thus the major developmental story could not be captured.

Once in high school, many students are tracked (either *de jure* or *de facto*). Efforts to “detrack” students by creating freedom of choice with respect to coursework, however, are often unsuccessful (Yonezawa, Wells, & Serna, 2002). That students opted not to leave their tracks—often despite their ability to perform at “higher tracks”—reflected several social and cultural features. Students in lower tracks often were not as informed about courses as their higher track counterparts; administrators were often resistant to moving Latino/a American and African American students into higher tracks; and, most importantly, tracks fostered a sense of identity that few students were willing to abandon to “move up” to higher tracks. Thus, even when faced with new options, many students prefer continuity because of how they come to view themselves and “how the world works.”

### *The Principle of Timing*

The developmental antecedents and consequences of life transitions, events, and behavior patterns vary according to timing in a life course.

Life-long processes of human development and human agency underscore ways of thinking about the timing of lives and their social contexts. As Neugarten (1968) showed in her pioneering work, people do not march through life in concert. They tend to vary by the age at which they pass through life transitions—when they begin and complete their schooling, enter a first job, establish an independent domicile, share a household with a friend, marry, have children, see children leave home, and lose their first parent. They also vary in when they perceive themselves as young, middle age, and old. In *Children of the Great Depression* (Elder, 1974/1999), some members of their cohort entered marriage before their 20th birthday, whereas others were still unmarried a decade later. Early marriage tended to produce life disadvantages, from socioeconomic hardship to the loss of education. Early childbearing had similar consequences.

All of these age variations can make a difference (Hogan, 1981) by setting in motion a dynamic of cumulative events and processes. The timing principle may suggest that different points in life represent sensitive periods during which life events and transitions affect age-specific vulnerabilities. Such a perspective is evident in many studies of the timing of poverty and cognitive development, which often are based on the assumption that deprivations have differing effects at different ages because of the course of neurological development. Another perspective, however, and one that is not mutually exclusive, is illustrated by these examples from the Depression studies: Different ages represent different constellations of opportunities, constraints, roles, and social connections, all of which condition the effects of transitions and stressors. To illustrate this point, we turn to the ages at which children experience the breakup of their family. The timing principle has been productively applied to a range of phenomena, however, including retirement, widowhood, first birth, age of onset of many physical and mental health challenges, degree completion, and unemployment spells.

No time is good for a child’s loss of a parent through separation or divorce, but the child’s age when such change occurs can make an important difference in its consequences. To address the impact of a single-parent household, Krein and Beller (1988) matched mother-daughter and mother-son samples from the National Longitudinal Surveys to investigate three relevant hypotheses: (1) the transition to single-parent status is most damaging during the early preschool years, owing to heavy time demands; (2) duration of residence lessens the educational achievement of offspring by diminishing social resources; and (3) boys are likely to be more impaired by the change than girls, owing to modeling processes (see also McLanahan & Sandefur, 1994). Although Krein and Beller designed precise measures of the age and length of time a child lived in a single-parent household, the reports of family structure are retrospective because the mothers were interviewed between the ages of 30 and 44. The offspring were interviewed when they were 14 to 24 years. However, such retrospective reports are reasonably accurate.

The study found that timing mattered, along with duration and gender: (a) the adverse effect on education was much greater for the preschool versus the later years, (b) the adverse effect increased with the number of years a child spent in a single-parent household, and (c) the adverse effect was more negative for males than for females. The strongest and most consistent timing and duration effects were obtained among European American

males, with family income controlled. African American females and males were next in line on effects, followed at some distance by European American females. Whether family income was controlled, the timing and duration of living in a single-parent household mattered least for European American females. The meaning of this result was not pursued in the study, although these young daughters of single-parent mothers may be protected by maternal support and the model of a self-sufficient woman.

### *The Principle of Linked Lives*

Lives are lived interdependently and social-historical influences are expressed through this network of shared relationships. The principles of timing and linked lives address in complementary ways the temporality, process, and context of lives and human development. Interdependent lives highlight the role of significant others in regulating and shaping the timing of life trajectories through a network of informal control. This network can be thought of as a “developmental context” (Hartup & Laursen, 1991) and as a “convoy” of significant others through life (Antonucci & Akiyama, 1995). Whatever the plans of an individual, these “significant others” initiate or experience life transitions that produce transitions in his or her own life. As Becker (1964) once observed, the expectations and informal sanctions of these “others” channel behavior and the life course in certain directions.

Linked lives are expressed in *Children of the Great Depression* (Elder, 1974/1999) across the generations, in the parental marriage, and in the relationship of parents and siblings. Older and younger siblings influence each other directly through their encounters, whether nurturant, competitive, or conflictual (Brody, 1996). In an African American sample, Brody et al. (2003) found a significant link between the antisocial behavior of older and younger siblings, but it was strongest in disadvantaged neighborhoods that provided abundant opportunities for the younger sibling to express this behavior, when compared to siblings in affluent residential areas. Examples of an indirect path include the experience of parents with the eldest child that undermines or strengthens their sense of competence in parenting. A third potential sibling link involves the differential treatment of siblings by parents, relatives, or teachers. Little is known about continuity and change in sibling relationships from childhood into the adult years.

Family changes are especially relevant to the principle of linked lives and its implications. Hernandez (1993) referred to a number of revolutionary family changes in

the lives of children and adults, including the decline in family size, migration from the land, growth in women’s employment, divorce, and single parenting. Marriage and the mutual regulatory influence of each partner illustrate both the process of timing through the synchronization of lives and the embeddedness of each family member’s life. For example, Caspi and Herbener (1990) investigated the influence of marital relationships on the developmental trajectories of husbands and wives. In “choosing situations that are compatible with their dispositions and by affiliating with similar others, individuals may set in motion processes of social interchange that sustain their dispositions across time and circumstance” (p. 250). Among marriages with strong ties, they observed trajectories of parallel development over 20 years. Husbands and wives did not change toward greater resemblance in developmental trajectory, but they did show a parallel course of development. When marriages dissolved, the former partners tended to follow less parallel trajectories.

Linked lives also refer to mechanisms of transmission across generations, including the reproduction of education, occupation, income, values and beliefs, poor health behaviors, health, and even place of residence from parent to offspring. For example, drawing on the Youth Development Study, Ryu and Mortimer (1996) found parental work experiences and values to be correlated with the children’s work values. Mothers’ extrinsic work values (such as on money and security) fostered similar values in the lives of their teenage and young adult daughters, and mothers with strong intrinsic values (including work autonomy and interest in job) were least likely to have daughters who valued extrinsic rewards such as high income and status. For sons, the supportiveness of parents mattered more than parents’ actual work values and occupational experience. The more supportive the father and mother, the stronger the son’s intrinsic values. Intergenerational relations are an important medium for the transmission of work values.

Although *transmission* implies influence from parent to child, the opposite pattern is also possible, as was recognized long ago by the concept of reciprocal effects, evocative patterns, and child effects. For example, a young girl’s pregnancy can have consequences that fundamentally change the lives of her mother and grandmother, among others. When a 13-year-old has a child, her 28-year-old mother becomes a grandmother, and her grandmother becomes a great-grandmother. Using data on 41 female lineages from urban multigenerational African American families in Los Angeles, Burton (1985; Burton

& Bengtson, 1985) creatively explored the ripple effects of teenage pregnancy across the generations. The age ranges of respondents in the early lineages were 11 to 18 for the young mothers, 25 to 38 for the grandmothers, and 46 to 57 for the great-grandmothers. The other lineage units were judged on time in transitions. The age ranges for mothers, grandmothers, and great-grandmothers were 21 to 26, 42 to 57, and 60 to 73, respectively.

Interdependent lives also extend beyond the family to friends, teachers, and neighbors. Theories of resilience commonly assume that positive influences can offset negative influences originating in the family (Luthar, 2003; Werner & Smith, 2001). A positive school environment of classmates and teachers might compensate for a child's punitive family environment or a drug-infested neighborhood. Relevant to these issues is a short-term longitudinal study of adolescents in Prince George's County in the area of Washington, DC (Cook, Herman, Phillips, & Settersten, 2002). The influence of nuclear families, friendship groups, schools, and neighborhoods was assessed in the lives of mainly African American and European American students in the seventh and eighth grades during the early 1990s. The quality of all four contexts had independent and additive influences on adult success, defined by a composite of school performance, social behavior, and mental health indicators. The effect of any one context was not large, but the total contextual effect proved to be substantial.

### *The Principle of Historical Time and Place*

Individual life course is embedded in and shaped by historical times and places over a lifetime. One of the best examples of both historical and spatial variations in the life course and human development comes from studies of lives during military times. The immediate years after World War II, for example, were hard times in many parts of Europe and Asia, unlike the prosperity experienced in the United States. Children who grew up in financially strained families in California during the Great Depression frequently saw military service as a "bridge to greater opportunity." Without getting into the details of selected studies, we note some basic features of the transition to military service, in eras of World War II, the Korean conflict, and the Vietnam War (Elder & Caspi, 1990). More generally, the effect of military service varies according to its historical time and place (MacLean & Elder, 2007).

First, military service tended to pull young people from their past, however privileged or unsavory, and in doing so it created new beginnings for developmental life changes.

Basic training defined a recruit's past as irrelevant. This definition encouraged independence and responsibility, separated recruits from the influence of their home community and family, and allowed a degree of social autonomy in establishing new ties. Basic training also promoted equality and comradeship among unit members, made prior identities irrelevant, required uniform dress and appearance, minimized privacy, and rewarded performance based on group achievement.

A second distinctive feature involves "a clear-cut break from the age-graded career," a time-out in which to sort out matters and make a new beginning. Military duty legitimized a time-out from education, work, and family, and liberated the recruit from all conventional expectations for an age-graded career, such as expectations regarding progress and life decisions. Just being in the armed forces released the recruit from probing life-decision questions from parents (e.g., Have you decided on a job or career? When will you be promoted or get married?). This time-out would be far less timely for men and women who were mobilized in the midst of family and career responsibilities.

A third feature of mobilization offered a broadened range of developmental experiences and knowledge, including exposure to in-service skill training and educational programs, as well as exposure to new interactional and cultural experiences through service itineraries that extended across the country and overseas. Out of such experiences came a greater range of interpersonal contacts, social models, and vocational skills. Horizons were broadened and aspirations elevated.

The principle of historical time and place acknowledges the essential complementarity of two perspectives—historical and ecological. The impact of historical time is expressed through its ecology. Thus the Great Depression's impact varied in manifestation by region and size of place in the United States. Many of the basic life course concepts just noted and the linking mechanisms and principles emerged from an historical study of children who were influenced by the Great Depression, though the project paid little attention to ecological variations. However, remarkable progress in recent decades has been made in applying such analytic tools in spatially oriented research on changing neighborhoods, communities, and societies. This work investigates migration, a form of social change that begins with the geographic movement of people from one context to another. Progress to date reflects increasing sophistication with respect to sampling, research design, and measurement. We turn now to a consideration of these advances.



## LIVES AND CONTEXT: HUMAN AGENCY AND SOCIAL OPTIONS

Contexts of human development generally bring to mind social environments at a point in time, but the life course framework views environment as highly interactive and temporal. A child's social network is not a fixed social structure but rather a dynamic system of social relationships. A key feature of this process involves the continual entry of new participants and the departure of members through mortality and exit transitions such as residential change. Although communities vary greatly on residential stability, most gain and lose a significant number of residents over several years. Ever since the 1960s, the increasing application of longitudinal designs to the study of lives has encouraged a corresponding study of their temporal social environments as well, and of the interplay between the lives of individuals and their changing world.

Context, in this chapter, refers to a range of settings, from clusters of houses to neighborhoods, villages, communities, and regions. The residential unit is common to all of these settings, but contexts may also include schools, daycare, and other social and physical environments that children are exposed to and interact with over the life course. Consider, for example, school mobility, or changes between schools (Crosnoe & Benner, Chapter 7, this *Handbook*, this volume), a source of change in children's exposure to social and institutional environments that can be a positive or disruptive force in school performance and social and emotional well-being. The effects of these transitions, especially moves between grade school and middle school and middle school and high school, are dependent on timing, the interplay among transitions and other life events, and what resources the individual child brings to the transition. Earlier transitions from elementary to middle school are associated with negative student outcomes, as younger children may be less able to adapt to their changing contexts (Simmons & Blyth, 1987). A mismatch between children's needs and their new, less intimate and more impersonal environments in middle school contributes to some of these negative effects (Eccles et al., 1993). However, if a change improves the person-situation fit for students, such as moves to schools that offer special programs and services that better suit a child's needs, outcomes are more likely to be positive despite the potential disruptive effects of attending a new school. In addition, school moves and life transitions may have cumulative effects that persist and grow, like compound interest, through time.

As the number of school moves increases, or if school moves are coupled with one or more residential moves, family disruptions, and other major life events, the chances of negative outcomes for children increase (Simmons & Blyth, 1987). Children from disadvantaged socioeconomic and family backgrounds appear not only to have more disruptions associated with school transitions, but also fewer resources to draw on to cope with their changing lives and contexts (Beatty & the National Research Council, 2010). In the process of school mobility, social and institutional contexts, individual development and resources, and the cause of, or motivation for, moving interact in both time and place to influence a range of child outcomes, from test scores to measures of self-esteem.

An additional, well-studied source of change in place in the lives of children is migration. The scientific study of human migration has always involved a focus on the interplay between individual lives and changing environments, in theory if not in life record data, and it has told us much in recent years about how to think about the contextualization of human development. During the first decades of the 20th century, the early Chicago School of Sociology featured studies of neighborhoods (Leventhal, Dupéré & Shuey, Chapter 13, this *Handbook*, this volume) in cities and research on migration and immigration. Fifty years later, Wilson (1987) reinvigorated the contextual study of urban social disadvantage with his penetrating analysis of the causes of concentrated poverty. Similarly, Massey and Denton (1993) gave renewed visibility to the pervasiveness and consequences of segregation in *American Apartheid*. All of these developments in theory, methods, and research have contributed to a new ecology of human development, which we sketch in the following sections.

### Context and the Life Course

Three life course themes are important in thinking about the contexts of children and young people. First, the contextual history of the individual is inextricably linked to his or her movement, both into and out of geographic places, most especially residential locations that are so much a part of one's life course and a source of social ties and role models. For the young who are still dependent on their family, parents select a community or neighborhood of destination within various constraints. This choice making shifts to offspring as they leave home for other places, whether within or outside their community. The qualities of human agency (initiative, resourcefulness, optimism, determination) play an important role in this process.

Selection of a place in which to live or to attend school is not merely a unidirectional process, according to the new ecology of human development; it is a reciprocal process. People select schools and neighborhoods, and the latter select students and families through incentives and standards, among other processes.

Second, the sequence of single and multiple social roles across one's life can be coupled with movement within and across places. Although frequently ignored, entry into a new social role may involve more than exposure to new responsibilities—it may also include exposure to a new geographic location, such as a new neighborhood, school, or workplace. This linked change in roles and contexts is common for young people as they leave home to make their way in education, work, and family. Geographic, social role and age-graded trajectories are interwoven across the life course as an evolving context of human development.

A third consideration is important in thinking about the contextual influences and constraints on human development—that all geographic places include individuals who did not actively select them. These individuals play a role in shaping contextual influences. In addition, these places are located in a surrounding environment (sometimes called an *externality*). The new interdisciplinary ecology of human development, which emerged during the last two decades of the 20th century (Sampson, 2012), has shown that a school or neighborhood's location within this surround (e.g., encompassing area) makes a significant difference in the context's developmental impact on its families and young people.

### Conceptualization and Measurement

The increasingly nuanced understanding of the relation between lives and contexts that form this ecological perspective relies, in part, on improvements in how contextual units are conceptualized and measured (Wachs, Chapter 21, this *Handbook*, this volume). These advances are closely linked, as it is necessary to develop concepts about the nature of the effects of space and place before they can be measured. In assessing the influence of contexts on children's lives, some important considerations include specifying the spatial extent of contexts, identifying and measuring contextual traits, and integrating the spatial aspects of context with the inherently temporal nature of lives.

In pioneering studies of ecological psychology, Barker and colleagues examined behavior settings, which consist

of small, contained units such as classrooms, churches, and banks (Barker, 1968; Barker & Gump, 1964). Bronfenbrenner expanded the concept of context to include a nested hierarchy of ecologies, not unlike a Russian Matryoshka doll (Bronfenbrenner, 1979). These nested systems might include the family, but also the school, community, and nation. Following the works of Wilson (1987) and Massey and Denton (1993), neighborhood and community studies sought to investigate the effects of local areas on a range of outcomes. Multilevel trajectory statistical models were joined with new data collection methods regarding social ecologies (Sampson, 2012). Studies of neighborhood effects have demonstrated that the poverty rate, ethnic composition, and educational level of the census tracts, counties, and zip codes that children live in are important factors in their development.

Typically in neighborhood studies, administrative units associated with an individual's place of residence, such as census tracts, are used as proxies for neighborhood or community. Indeed, demographers have long used geographic territories and the aggregate characteristics of residents to describe places, sometimes called “compositional effects” (Voss, 2007). However, recent work has advanced the measurement of context beyond administrative or census geography to include spatial territories that are more meaningful representations of the places in which people reside. For example, Matthews, Detweiler, and Burton (2005) developed an approach called “geo-ethnography,” which combines ethnographic information on families and neighborhoods with geographic information system (GIS) technology. With this approach, they are able to situate families and children in both space and time as they go about their daily activities. This work demonstrates that the lived experiences of families extend beyond the fixed spatial contexts of census tract and neighborhood.

Understanding the spatial extent of contexts and contextual processes has been expanded through the consideration of extralocal processes, or spatial externalities (Sampson, 2012). Rather than simply focusing on the effects of neighborhood of residence on individuals, one may also consider the effects of adjacent neighborhoods on individual or aggregate outcomes. This allows higher-order processes, such as the social structure of the city, to be considered in tandem with local effects. For example, Sampson and colleagues (Sampson, Morenoff, & Earls, 1999) showed that a neighborhood's spatial proximity to areas with high levels of social control for children and adult-child exchange confers advantages beyond the characteristics of that particular neighborhood.

Neighborhood advantage and disadvantage are the result of more than local conditions. Social and political dynamics that extend beyond the borders of any particular neighborhood shape local contexts. Consider how extralocal decision processes can undermine the quantity and quality of resources that are available in a community. Decisions regarding the incorporation or annexation of territory can exclude minority-inhabited areas from rural municipalities. Such exclusion creates disadvantaged residential areas lacking infrastructure (such as sewers), services (including policing), and local political representation (Marsh, Parnell, & Joyner, 2010). Under such conditions, residents are exposed to greater health risks and lower property values. In this manner, selective annexation contributes to ethnic segregation and unequal access to resources (Lichter, Parisi, Grice, & Taquino, 2007).

However the geographic boundaries of places are defined, places have some qualities that can be summarized by the traits of their inhabitants, such as median income or ethnic composition. Yet other aspects of places must be approached in a different way. As the understanding of contextual effects has become more nuanced, it has been recognized that places have traits that are more than simply the aggregate of the local population. With increasing interest in neighborhood effects, it has become clear that community-level properties are worthy of systematic measurement in their own right. The term *ecometrics* was coined to describe the growing set of methods and techniques used to produce and evaluate measurements of ecological settings (Raudenbush & Sampson, 1999).

An important addition to the study of context is the application of techniques of systematic social observation, or SSO (Reiss, 1971), to the measurement of the qualities of neighborhoods. This measurement system provides metrics of places that are independent of the perceptions of survey respondents. For example, in a study of responses to crime in Baltimore neighborhoods, interviews were conducted with residents that included questions about the perception of the neighborhood (Taylor, Shumaker, & Gottfredson, 1985). Then, trained raters walked the streets surrounding the respondents' homes and collected information on a range of physical and social traits, including housing layout, traffic volume, and persons loitering (Taylor, 1997). This early work demonstrated that reliable and consistent measurements of observed neighborhood environments could be carried out.

The Project on Human Development in Chicago Neighborhoods (PHDCN) enlarged the ways in which

contexts are conceived of and measured (Sampson, 2012). The project followed the example set by earlier work in that it combined family surveys with SSO while incorporating a breadth of additional material about community contexts. These studies aimed to capture aspects of community context that cannot be gleaned from methods that focus on individuals and families. A community survey addressed the structural and cultural organization of neighborhoods and interviews with community leaders who were included in a key informant study. Other aspects of community context were measured using a variety of sources, including census returns, police and court records, and health statistics. Follow-ups were conducted for the SSO, community survey, and informant interviews, allowing for the study of neighborhood stability and change.

Subsequent studies, such as the Los Angeles Family and Neighborhood Survey (L.A. FANS), have drawn on the materials developed for the PHDCN (Peterson, Sastry, & Pebley, 2007). The National Children's Study (NCS) developed protocols for SSO that are applicable to rural contexts, such as Duplin County, North Carolina (Walter, Dole, Siega-Riz, & Entwisle, 2011). Rural contexts had previously proved challenging to measure with SSO methods designed for cities. Census tracts, often used as a definition of neighborhood or community, are less applicable to rural settings, and a commonly used observation unit, the block or block face, does not occur on rural roads. In addition, the NCS includes local measures of the environment, such as air quality, in its data collection effort.

Some social processes occur at the neighborhood or community levels that are not well captured by aggregate data. For example, collective efficacy is a social process that is measured and evaluated at the community level. Broadly defined, it indicates the social cohesion among neighbors and their willingness to intervene for the common good (Sampson, Raudenbush, & Earls, 1997). Just as individuals vary in self-efficacy, communities also vary in the extent to which they achieve collective action. Neighborhoods ranked high on collective efficacy are associated with lower levels of violence, as well as a variety of other outcomes including increased supervision and monitoring of children (Sampson, Morenoff, & Gannon-Rowley, 2002). One of the mechanisms through which collective efficacy operates is the activation of social ties to bring about community action.

The measurement and conceptualization of contexts and contextual processes is an essential first step in understanding how individuals and contexts interact, yet it is

also important to connect contexts with the temporal flow of lives. Local networks of social ties represent another dimension of contexts that have consequences for children. In Coleman's study of high school completion (1988), frequent residential mobility decreased the chances of high school graduation. Residential moves may entail the loss of social capital, as local social ties are severed, adversely affecting educational outcomes. A study of residential mobility in Toronto demonstrated that life course concepts, specifically the concept of linked lives, offers a more nuanced understanding of the connections between local social ties and high school completion (Hagan, MacMillan, & Wheaton, 1996). Children from families with low levels of parental support are more susceptible to the negative effects of moving than children from families with high levels of support, suggesting that parents can partially compensate for the loss of social capital.

Children's social networks also change over time. Friendships are moving sets and systems of relationships that change frequently during childhood (Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*, this volume). In a longitudinal study of almost 700 youth, Cairns and Cairns (1994) tracked, among other things, the stability and change in peer groups. Moving by changing schools or classrooms and taking up new activities provide new opportunities for forming friendships, and, as a result, the peer groups of children and adolescents can be rather fluid. Indeed, spatial propinquity is one of the most important factors in forming and maintaining childhood friendships. Despite the changeable nature of peer groups, they have a lasting impact, as members of the same social groups in childhood tend to have similar outcomes later in life, including the experience of dropping out of school and bearing children in the teenage years. Early peer affiliations may place constraints on subsequent pathways for children, or new friendships may repeat the features of earlier ones.

Children are exposed to a sequence of different contexts over varying durations and periods in their development. There are certain times when they are more susceptible to the influence of their ecological settings. For example, it has been demonstrated that early exposures have important and enduring effects. In a longitudinal study of children in British Columbia, exposure to concentrated disadvantage in kindergarten (i.e., a composite measure of several dimensions of social and economic inequality), had a lasting effect on reading comprehension scores at Grade 7 (Lloyd, Li, & Hertzman, 2010). The effect of neighborhood concentrated disadvantage during Grade 7 had no

independent effect on reading scores, implying that early exposure had significant and enduring effects.

Duration of exposure to contexts is another important consideration in assessing the interaction of ecological effects and the life course. Wheaton and Clarke (2003) found a lagged and cumulative effect of childhood socioeconomic disadvantage on mental health in young adulthood. Young adults' current exposure to socioeconomic disadvantage had no effect on mental health net of the effects of childhood exposure. Using the PHDCN data, Sampson, Sharkey, and Raudenbush (2008) found that early exposure to neighborhood disadvantage has lagged effects on verbal scores several years later. The effects of exposure to concentrated disadvantage on verbal ability were long lasting rather than instantaneous. Contextual influences vary by "dosage," and the frequency, intensity, timing, and cumulative exposure to a particular context are determinants of the strength of neighborhood effects (Galster, 2011).

A complete understanding of context and the life course includes an integration of the spatial aspect of places with the temporal dynamics that characterize the life course. Places are not static entities, they change as their inhabitants enter and exit, the physical environment alters, and local social dynamics shift. Consider the Nang Rong study in rural Northeast Thailand, an example of a longitudinal study of both changing individuals and their changing environments, with emphasis on the transition to adulthood. Because this study illustrates many of the concepts of context and lives, we provide a full account of it. This multidisciplinary project began as a community-based rural development intervention in 1984 (Walsh, Rindfuss, Prasartkul, Entwisle, & Chamratirinthrong, 2005). Nang Rong is a rural, formerly frontier area, dominated by small-holder agriculture, with rice and cassava as principal crops. Once the frontier closed, in-migration to the region ceased and a period characterized by out-migration to urban areas, labor migration, and development efforts began. Several waves of social surveys and migrant follow-up studies were supplemented by a wealth of contextual information, including aerial and satellite image time series, and other detailed geographic information. With this information, analysts were able to track individual, community, and environmental change over time. Modeling efforts also link individual and household behavior with land use change (Entwisle, Malanson, Rindfuss, & Walsh, 2008).

Studies using data from the Nang Rong project illustrate concepts that tie contexts to the life course, particularly exposure to new contexts and opportunities associated



with young adult migration and the effects of the duration and cumulative exposure to contexts. With a longitudinal design, and a series of migrant follow-ups, these data are well suited to study the transition to adulthood, which in Thai society involves the completion of education, entry into the labor force, marriage, and the initiation of childbearing. In Nang Rong, migration is an important component of the transition to adulthood because both short- and long-term labor migrations are common for men and women. As young people leave the parental home and natal village, they are exposed to new contexts that influence and are influenced by the changes in roles and statuses that occur during the transition to adulthood.

In Thai society, there are strong norms about the ordering of employment and marriage, especially for young men, who are expected to be financially equipped for marriage. Though migration tends to delay marriage in Western contexts (Rindfuss, 1991), in Nang Rong, both young men and women who participate in labor migration marry sooner than their counterparts who remain in their village of origin (Jampaklay, 2006). For women, the positive effect of migration on marriage remains even after controlling for schooling and employment, whereas for men, the effect of migration on marriage is entirely explained by employment. There are differences between migrants and nonmigrants not only in the timing of marriage, but also in the village of origin of their spouses. Migration exposes young people to new social groups, and as a result, they are more likely to marry individuals from outside of their village. Young people who seek work in nonagricultural settings, such as factories, are even more likely to have a village exogamous marriage.

Migration experiences also influence entry into childbearing. However, the effect of migration on childbearing varies by family formation stage, suggesting that the new settings migrants are exposed to operate differently at different points in the life course. For instance, migrant status is associated with higher fertility, but only among low-parity (0 or 1) women, who are in the early stages of family formation (Edmeades, 2006). Migration influences fertility by encouraging early entry into marriage, and thereby earlier childbearing. Despite the earlier initiation of childbearing by migrants, cumulative urban experience over the life course has a dampening effect on total fertility, as urban migrants adopt the lower childbearing norms of city dwellers. Thus, the effect of migration experiences and urban contexts play out over an extended period, and one must consider an entire childbearing career to gain a complete understanding of its relation to migration.

As we have noted, contexts are not static entities in the lives of children. They move through different contexts as a result of residential mobility, changing schools, and changing roles in the course of their lives and development. It follows that the context of human development is a system of complex and reciprocal interactions between individuals and their ecologies. Places can shape and influence the trajectories of children, often in complicated ways, as in the case of lagged and cumulative effects. Young people also shape their contexts, as they choose certain actions, such as labor migration, or build networks of friends. However, no understanding of the relation between individuals and their contexts is complete without considering the ways in which individuals select or are sorted into particular contexts.

### **Selection and the Life Course: A Social Process**

Some young people leave their community to seek work, whereas others stay behind. Individual qualities tied to agency, such as initiative and resourcefulness, are certainly factors in determining who migrates. However, the selection of places to live, work, and attend school are not solely determined by individuals. Through mechanisms such as structures of opportunities, limitations, and incentives, places also select people. The process of selection into and out of contexts illustrates how individual agency and broader structural factors combine to influence the contextual history of the individual.

In a study of Iowa adolescents conducted in the wake of the farm crisis of the 1980s, Elder, King, and Conger (1996) examined the pathways by which adolescents decide to remain near home or move to new communities. Residential choices are contingent on educational and work plans, but are also shaped by preferences to live near family. These preferences, sometimes established by 8th grade, before adolescents formulate concrete notions about future work or college, can set geographic boundaries on other choices, such as whether to attend an in-state college or search for work in the local area. Yet, adolescents' preferences are influenced by changing conditions, such as the perception of limited job opportunities and family conflict, which weaken the inclination to remain near home. School performance and college prospects also change over time and can draw students away from family and community. Thus, residential decisions are formed in part by individual preferences, but are also molded by sets of social contexts, ties, and options, such as employment and educational prospects and the quality of family relationships.

Self-selection into situations and contexts represents a fundamental conceptual dynamic in the life course. With every transition, individuals are faced with choices and decision making within the bounds of their knowledge, resources, opportunities, and constraints. Selection has also been treated as a methodological concern because failure to account for preexisting differences that contribute to selection can skew estimates of the outcome of interest. Selection in this sense presents challenges in understanding cause and effect. For example, there are competing hypotheses about the relation between low SES and health (George, 2003a). Hypotheses of social causation assume that low SES contributes to poor health outcomes among young people. Social factors affect health either directly, through access to health resources, or indirectly, as in the case of exposure to stress and toxic environments. Alternately, a social selection hypothesis states that poor health has social consequences that contribute to declining SES, such as impaired capacity to work. However, both hypotheses can be valid, because the relation between SES and health is reciprocal. Social factors may contribute to health at the same time that health may cause changes in social status.

Research concerned with the methodological dimensions of selection has prevailed for many years. Experimental designs were proposed to address selection effects through random assignment to treatment groups. The Moving to Opportunity (MTO) program represents an ambitious attempt to apply an experimental design to the implementation of housing assistance programs (Sanbonmatsu et al., 2011). The experiment was designed to assess whether moving from a high-poverty neighborhood to a lower-poverty neighborhood improves the social and economic prospects of low-income families. Selection bias makes this question difficult to answer because certain types of families, such as those possessing more resources, are more likely to move. To address this methodological concern, MTO provided a randomized design capable of parsing the differences between movers and nonmovers (for more detail on MTO and selection, see Elder & Shanahan, 2006).

Randomized designs, such as MTO, are rare and often impractical to implement. Despite some of the traction gained on the methodological challenges associated with selection, they offer an imperfect solution. For example, these designs cannot uncover the specific mechanisms through which neighborhoods influence well-being (Sampson et al., 2002). Selection is not solely the domain of methodology, because the process of selection into

particular contexts can be viewed through life course theory, especially the concepts of agency and pathways (George, 2003b). From a life course perspective, selection represents a substantive research issue. In this light, contexts reflect prior experiences, or the pathways through which individuals become exposed to a particular environment.

As Sampson (2012) made clear, selection is a social process worthy of study in its own right. Sorting into and out of particular places can be seen as a series of linked processes that operate through individual actions and broader community and social structures. Individuals choose where to live, but make their choices within sets of preferences and constraints. Particular contexts may be characterized as recruiting and sorting individuals through incentives or obstacles to membership. Developing conceptual models of how selection occurs aids in understanding these processes. This is not the case when selection effects are merely statistically controlled (Caspi, 2004).

When selection is considered a social phenomenon, it is possible to investigate the reciprocal processes by which contexts choose people and people choose contexts. Although not concerned directly with changes in place, several lines of research have elucidated the dynamics of selection processes. This reciprocal perspective is illustrated by the choices young people make as they decide to enter the voluntary armed forces, the work force, or college. Using data from the National Longitudinal Study of Adolescent Health (Add Health), Elder, Wang, Spence, Adkins, and Brown (2010) examined the role of disadvantaged background, lack of social connectedness, and behavioral problems in drawing young men into the military instead of college or the labor market. The volunteer military offers socioeconomic, educational, and developmental incentives and presents a set of risks including injury and death. Other options, such as enrollment in college, also have associated incentives, as well as prerequisites such as resources to meet tuition expenses and adequate academic performance. The results of Elder and his colleagues suggest that young people weigh the advantages and disadvantages of joining the military against alternative paths.

Access to resources is a factor in the decision, as the most advantaged are more likely to attend college, whereas the most disadvantaged may not meet the minimum requirements for enlistment. Prior experiences are also important, as students with less stable families, low levels of social support, and involvement in problem behaviors such as fighting are more likely to enlist than their respective counterparts. Social ties may also lead students to



select into different tracks, as those with friends in the military or a family history of military service are more likely to enter the military rather than college or work. When students exit school, a variety of individual and social factors interact with a set of institutional incentives and obstacles to channel young adults toward college, the work force, or the military. The benefits and costs incurred by joining the military vary with the particular background of the individual, but the goal of maximizing opportunities drives decisions that are made within the constraints and opportunities afforded by an individual's own set of traits (Wang, Elder, & Spence, 2012).

Students are faced with selection into certain pathways before they leave school and make choices about entering work, the military, or college. School tracking, or the selection of students into different curricula based on previous performance, can allocate students to different pathways, such as college preparation or vocational training. Yet, there is great variation among tracking systems in selection criteria and the possibility to move between different tracks (Gamoran, 1992). In some schools, tracking may be a strong signal of student's future achievement, especially when it permits advantages to accrue to students who already have them (Lucas, 1999), but there is a significant amount of contextual variation. In some cases, students elect their curricular track, but in other instances a track is chosen for them. Regardless of whether the track is elective or not, it places a student on a path that has consequences for their future educational and occupational trajectories.

Young adults also exercise agency when they leave the parental home and select the community in which they will reside. However, these acts of agency are not disconnected from the reciprocal selection processes that occur between individuals and contexts. For example, although a young person may choose the community in which to reside after leaving the parental home, subsequent residential changes may occur that are out of his or her control, such as shifts in neighborhood composition. These changes illustrate how the reciprocal relation extends beyond individuals and their contexts to include the people around them.

In a study of geographic change during young adulthood using PHDCN and the Panel Study of Income Dynamics (PSID), Sharkey (2012) observed patterns of continuity and change in residential conditions between childhood and adulthood in segregated urban areas. Among young adults who exit segregated cities, he observed a trend toward ethnic equality, as young adults move into more integrated neighborhoods. Yet, as these individuals move further into

adulthood, there is a reproduction of initial neighborhood inequality. Sharkey described this process in terms of "selected" and "unselected" change. Young adults who "select out" of extremely segregated areas end up returning to segregated areas later in life. One explanation for this trend is the process of "unselected change," or change in the neighborhood environment that occurs around individuals. Such change, in this case increasing segregation, runs counter to the preference of the individual for an integrated neighborhood. Put another way, "selected change" leads young adults into relatively integrated environments, but "unselected change" contributes to increasing segregation around them over time.

The agency of young adults is a factor in selection into residential areas, but it is only one part of a reciprocal process, as residential environments change around individuals. In Sharkey's words, "to understand change, one must move beyond an exclusive focus on individual choices and instead consider systems of interrelated decisions made by individuals responding to the change occurring around them" (2012, p. 21). So, neighborhood inequality is transmitted from childhood to adulthood not only because of individual choices, and the choices made by other people in their community. Neighborhood contexts change as their inhabitants change, but some qualities of neighborhoods, such as segregation, are also reproduced over time. Thus, a complete understanding of selection into a context requires the consideration of individual choices as well as overarching structures (in this case ethnic and class segregation) and the decisions of others.

Much of the work that stems from a renewed focus on contextual influences owes a debt to the ecological models of Barker, Bronfenbrenner, Lewin, and their students. When principles of life course theory are connected with increasingly nuanced understandings of place and context in the new ecology of human development, we gain a fuller appreciation of the ways in which lives shape places and places shape lives. This bidirectional interaction of contexts and the life course sheds light on the processes through which individuals self-select or are channeled into contexts. The inherently temporal nature of the life course, which is concerned with change, trajectories, and human agency, reminds us that people are not entities on which static contexts exert influence. Contexts are constantly changing as well, and the interplay between people and contexts often depends on the timing, duration, and intensity of exposures and interactions. We turn now to a consideration of the developmental impact of social change in historical time and place.

## THE IMPACT OF HISTORICAL TIME AND PLACE

Major historical events and the proliferation of longitudinal studies have drawn attention to the potential developmental influence of historical change and its ecologies. As we noted earlier, the Great Depression of the 1930s persuaded psychologists at the Berkeley Institute to collect information on the changing SES of the Oakland and Berkeley study children. These data were not used at the time, but their presence in the data archive some 30 years later enabled research on the life-long impact of this economic crisis.

This incident is not an isolated case, and it was not so even in the 1930s to 1940s, a time when few longitudinal studies were in operation. For example, Terman decided to collect information on military experience in World War II when an increasing number of young men in his study of “gifted children” (Holahan & Sears, 1995) were mobilized into the armed forces. The W. T. Grant Study of college men at Harvard University (1938–1942) also focused much of the data collection during the 1940s on military service (Monks, 1957). War-related data from these two studies have been used to assess the life course influence of military experience (Elder, Shanahan, & Clipp, 1997; Lee, Vaillant, Torrey, & Elder, 1995). In addition, data collection of longitudinal studies has been influenced by the Great Recession that took place between 2008 and 2011 (Vuolo, Staff, & Mortimer, 2012), resulting in the collection of more detailed information on socioeconomic adaptation.

### Studying Lives in Context: Some Considerations

In designing a longitudinal study to investigate the influence of social change and its social ecologies, researchers are advised to add a comparative cohort to obtain insights regarding historical change. Lacking such a cohort, the analyst would not be able to determine the generality of a study’s findings. Consider *Children of the Great Depression* (Elder, 1974/1999), which is based on children who were born and reared in a specific historical time and place, defined by culture, social institutions, and diversity of people—the 1920s, the San Francisco East Bay, California. The book also describes a very different Depression experience in Great Britain, Germany, and Japan. Even in the United States, conditions during the Great Depression varied among cities, East and West, and between rural and urban places. In view of this variation, the study’s generalizations are uncertain. Also uncertain

are generalizations across historical time such as periods of economic depression and prosperity.

However, it is still possible to focus on historical variations “within a specific birth cohort” because not all members are uniformly exposed to the same change. Consider the Oakland cohort with birthdates of 1920–1921 (Elder, 1974/1999). Some of the young people were exposed to severe economic loss in the 1930s, while others were largely spared hardship and family disruption. Variations of this kind were observed among families in the middle and working class as of 1929, enabling a delineation of nondeprived and deprived groups for systematic comparison. This design revealed enduring differential consequences for children’s life chances that extended into their middle years.

This study of children of the Great Depression eventually added a comparative cohort for the Oakland sample, the Berkeley study members who were born at the other end of the 1920s just prior to the economic collapse. With this extension, the project was able to show that the younger Berkeley boys were at greater risk of impaired development in hard-pressed families during the Great Depression than were the older Oakland boys. In the younger Berkeley cohort, boys in hard-pressed families tended to lose contact with their self-absorbed fathers, even when physically present. Cohort differences were generally reversed among the girls. The younger Berkeley cohort fared better, owing to the nurturance of the mother-daughter relationship and the social disadvantage of the Oakland girls who were going through physical and social maturation during hard times.

The Great Depression transformed the social world of the Oakland and Berkeley children, but this event proved to be merely part of their changing life story since they were exposed to the mobilization of World War II during the early 1940s and then the Korean War in the early 1950s. The Oakland cohort completed high school just prior to the onset of World War II and soon nearly all of the young men had entered the armed forces. Most of the Oakland girls were eventually drawn into the home-front labor force in the San Francisco region, especially the booming shipyards. The Berkeley children were too young for military service at the beginning, but three-fourths of the males served in the military between 1945 and the end of the Korean War in the early 1950s. Although *Children of the Great Depression* did not explore this wartime experience, the adult lives of both cohorts suggested that an understanding of them would be incomplete without investigating the lifelong impact of both economic

depression and war. To obtain essential life history data on the wartime experience and its effects, a research team in the mid-1980s obtained a completed military service questionnaire from men in both cohorts.

The men who grew up in financially strained families during the Great Depression frequently saw military service as a “bridge to greater opportunity.” However, just as *Children of the Great Depression* noted, the impact of this life transition depended on when it occurred in men’s lives—their life stage. According to the balance of costs and benefits, military service in both cohorts favored the recruit who entered shortly after completing secondary school. This time of recruitment came well before commitments to higher education, a marriage partner, children, and a line of work. By contrast, later recruitment tended to disrupt all of these activities (Elder & Caspi, 1990). The later the time of entry, the greater the disruption and life consequences among men in both birth cohorts.

Especially in the Berkeley cohort that was more adversely affected by hard times (Elder, 1986), young men with multiple disadvantages (such as a deprived family, poor grades, and feelings of inadequacy) were most likely to join up and to do so as soon as possible. In combination, these factors predicted early entry into military service and its pathway to personal growth and greater opportunity. Early entrants experienced greater life benefits from the service up to the middle years than did later entrants and their occupational achievements by age 40 showed no adverse effect of hard times. These benefits occurred through situational changes in the service that made recruits more ambitious, assertive, and self-directed as well as through government benefits to veterans in access to higher education and in loans for the purchase of housing.

The influence of military service remains largely a “black box” of unknown processes in the Berkeley and Oakland cohorts. However, insights regarding some of these processes have come from a compelling test of the early entry hypothesis. Two sociologists, Sampson and Laub (1996) made use of life record data on men who grew up in poverty areas of Boston (birth years, 1925–1930). More than 70% entered World War II. The sample came from a study of 500 delinquent European American boys (aged 10–17) who were committed to correctional schools in the state (Glueck & Glueck, 1968). They were matched with European American nondelinquents from the Boston schools. A rich body of life-history data collected on these study members between 1940 and 1965 provides unusual detail on the men’s service experiences (they entered at

18 or 19 and served over 2 years) including in-service training, special schools, exposure to military justice, and arrests. The delinquent boys ended up with a much longer string of antisocial events, and were less apt to obtain in-service training and veteran benefits from the GI Bill. But they were more likely to benefit from the service over their life course, when compared to the controls, and this pattern was especially true for men who entered the service at an early age. In-service training, overseas duty, and veteran benefits for education and housing significantly enhanced the job stability of men with a delinquent past, especially when they entered the service at a young age.

Life stage at exposure to Depression hardship and military duty in World War II tells contrasting stories of risk. “Young boys” were most adversely influenced by hard times, whereas older male recruits to the armed forces were at greatest disadvantage when they entered the service. Because these males were drawn to military service at an early age, they experienced its greatest benefits (as a benefit/cost ratio), thereby tending to counter the negative effects of their adversities in the Great Depression. For this cohort, the military clearly represented a pathway to greater opportunity through postwar prosperity, offsetting much of the damage of growing up in hard times. In this manner, they avoided becoming members of the “lost generation from the Depression years” that was forecast at the time. In the aftermath of military defeat in World War II, the war and postwar eras proved to be much harder and perilous for those who served in the armed forces of Germany and Imperial Japan.

The Oakland and Berkeley studies of the effects of social change used data from small longitudinal samples that were designed to address different questions. The initiation of these and other studies prior to the Great Depression and World War II provided a rare opportunity to investigate the impact of these historical events on study members’ lives. In the following section we look at more contemporary projects with much larger cohorts and samples. Their ecological units are also much larger in size, such as rural versus urban and entire provinces.

We begin with a comparative cohort study of the life course and health in regions of contemporary China that is based on methods that are particularly useful in the first stage of a social change project. The rural-urban divide provides the major ecological contrast, although significant advances have been made toward more detailed studies of ecological variations within the country. This section is followed by longitudinal studies of transforming change in

Eastern Europe, with a focus on the life course and human development of young people as they make their transition to new political worlds. Contemporary ecological models of human development will enrich future extensions of these studies.

### **Social Change in Life Course Health: The Case of China**

Research on societal change often requires a general analytic approach that maps the conceptual territory and identifies the primary influences for more intensive study like that provided by the Oakland and Berkeley studies. One such study design focuses on the age/period/cohort distinction. *Age* refers to aging, the life course and the study member's life stage at any time; *period* indicates the historical time of survey measurement and context; and *cohort* refers to a group defined by year of birth or entry into the system, such as a child's transition to primary school. Traditionally, an age/period/cohort analysis represents the initial step toward identifying significant effects that can then be investigated in a more focused and in-depth manner. The troubling statistical issue here is that each parameter is completely defined in terms of the other two, producing an unsolvable identification problem.

Recent advances in statistical evidence address this challenge. A book by Yang and Land (2013) presents applications of this advance within the history of age/period/cohort studies. A possible solution to the identification problem is to exclude one of the three components on the basis of substantive and/or methodological issues. The simplicity of this approach is an advantage as is its substantive relevance when the issue concerns study of an historical effect because this effect is expressed in terms of both period and cohort influences.

A good example includes only age and cohort in the model, with a focus on their interaction. Consider a pronounced downturn in the economy. A period effect tends to widen the gap between cohort trajectories over time and thus indicates a cohort effect. A longitudinal design also favors this interpretation because repeated observations over time for an individual generate a person/year data set that is distinguished by only a single indicator of time—it can be either age or period but not both. The best way to grasp these distinctions is to see them at work in a research project on a changing society, such as China.

Social change and rural–urban inequality are central themes of contemporary China, and, as Whyte observed

(2010), socioeconomic prosperity is heavily concentrated in the urban sector which is still largely “walled off” for people who live in rural China, owing to the migration constraints of rural household registration. Over 60% of the Chinese population resides in rural provinces. A study by Chen, Yang, and Liu (2010) addressed the health consequences of social inequality and the rural–urban divide in China. They used survey data from the longitudinal China Health and Nutrition Survey, a collaborative project with institutions in the United States and China. The survey includes a five-wave data set that spans 13 years, from 1991 to 2004. The age span begins at 21 years and extends well into late life.

Multiple waves in the project enabled a cohort analysis of age change in health and its relation to historical, rural–urban, and life-stage contexts. Respondents aged as members of each 10-year cohort across the follow-ups, producing age-graded cohort trajectories of self-reported health. The cohort members were asked about their health on a standard 4-point scale in each follow-up. Numerous studies have shown that this global measure is predictive of subsequent health and mortality (Chen et al., 2010). SES was measured by education and per capita family income. The investigators used a theory of cumulative disadvantage to account for the enduring effects of socioeconomic inequality.

The analysis addressed the effect of social inequality on self-reported health across the life course (within cohort) and the question of whether this life pattern varied across cohorts (an intercohort or social change effect). As noted earlier, the study focused on the effects of age as well as cohort and their interaction, and excluded the period parameter from the analysis. Because cohorts vary by age across historical moments, any historical effects would likely generate cohort differences in age-related outcomes. The results clearly document a strong intracohort link between patterns of social inequality and health differentials across the life span. With adjustments for cohort, the data reveal a process of cumulative disadvantage involving both limited education and income—the socioeconomic differential in access to health care, health self-care, and social support is greater at older than at younger ages and is influenced by income and education. These findings are consistent with those obtained in the United States.

However, variations across birth cohorts differ sharply from those observed in the United States. The impact of educational attainment on mean level of health decreased across successive cohorts, from the older to the younger, a



trend that is most pronounced in rural China. In addition, rural health care has declined more than urban health care in the recent reform era. More advantaged populations in developing societies tend to adopt a life style with unhealthy diets, less frequent exercise, and excessive drinking and smoking (Chen et al., 2010; Harris, 2010). Longitudinal research indicates that this problematic life style is established in childhood and adolescence, and follows an upward trend of accentuation into the middle years (Harris, 2010). Problems of obesity and chronic disease are associated with this life style.

The two major findings based on “within and between” cohort analyses are suggestive of promising next steps in this line of research. The study clearly shows a strong cumulative effect of social inequality on self-reported health, and identifies some explanatory processes, such as inadequate access to health care. We know that educational level makes a significant difference in the selection of available health care, but what other factors account for this process? What about the declining influence of educational level on self-reported health between older and younger cohorts? Can we learn something from the study members who are most and least likely to show a relation between education and the use of available health care? These are the kinds of questions that might emerge from an age/period/cohort analysis.

The census-like design of this China longitudinal survey clearly leaves much to the imagination on explanatory processes. A large-scale study of this kind can only provide a skeletal picture of the relation between social change and health across the life course. More focused research is needed on each sequential life transition across the life course, but this China project helps to frame more explanatory studies. One possibility is to extend the age range downward to the middle years of adolescence. These early years of development are vulnerable to the risks of a rapidly changing society, and set in motion the direction of developmental and health trajectories, with major consequences for the transition to adulthood and the young adult years.

The China longitudinal study addressed a long-term process of social change and thus differs significantly in adaptational requirements from the drastic economic decline and recovery cycle of the Great Depression. Observation of such change requires a shorter time span, one that may provide a sharp contrast of before and after the event. We turn now to studies that capture the life course effect of drastic change in the Soviet empire and in East Germany many decades after the end of World War II.

### **Societal Dissolution and Unification: Their Impact on Young Lives**

Very little is known about the lives of Europeans who grew up in the hard years of social displacement, institutional change, and extreme poverty after World War II (Judt, 2005), but studies of social transformation in Eastern Europe and the Central Asian sector of the continent provide vivid evidence of the human consequences of this era of personal change—from the break-up of the Soviet Union in 1990–1991 following “an era of liberalization” to the unification of Germany after 40 years of separation between West Germany and the German Democratic Republic.

These two examples of social change in young peoples’ lives represent contrasting processes. The dissolution of the Soviet Union led to 15 republics that became sovereign states. In a unique nationwide longitudinal study (Titma & Tuma, 2005), young people who began their schooling in the USSR suddenly found themselves in different countries defined by different cultures, socioeconomic systems, and life opportunities.

By contrast, the postwar history of Germany was shaped by its division into two countries, the Federal Republic of Germany in the west and the German Democratic Republic in the east within the orbit of the Union of Soviet Socialist Republics. Greater liberalization in the USSR during the late 1980s set in motion a process of change that led to the “fall of the wall,” separating West and East Germany, and the political process of unification. East Germans were incorporated into the Federal Republic of Germany as the latter’s social institutions and financial resources were transferred to the former East Germany. We begin this section with the Soviet Union’s dissolution and its life course effects because this process defined the larger context for German unification.

#### ***When the Soviet Union Dissolved***

Imagine the beginning of a national longitudinal study of young people’s lives just prior to a political transformation that turned all of the society’s states into sovereign countries with different governments, socioeconomic structures, and cultures. This scenario actually occurred during the research project of sociologist Mikk Titma, which began in the 1980s in the Soviet Union and continued into the 1990s. The good fortune of such unexpected change is that he managed to continue collecting data on the lives of the study members in their diverse post-Soviet worlds. They were all secondary school

graduates across the Soviet Union when first surveyed in 1983–1984.

The Paths of a Generation project (see Titma & Tuma, 2005) focused initially on the developmental trajectories of early life careers, but in the post-Soviet era it became a study of social change in socioeconomic attainment and loss. With his research team, Titma succeeded in following up most of the study members who were living in six successor states—Estonia and Latvia along the Baltic rim, Russia, Belarus, the Ukraine, and the Central Asian country of Tajikistan. The first follow-up occurred in 1988 to 1989, the second in 1993 to 1994, and the third in 1997 to 1999 when the study members were in their 30s. The analysis is based on approximately 12,000 young men and women.

As a birth cohort from the late 1960s, the study members were following a timely trajectory because they had completed their basic education before the dissolution of the Soviet Union and thus were able to move into the post-Communist era and take advantage of available opportunities for entrepreneurship, employment in a firm, and higher education. The basic level of education became less available in the post-Soviet era. Moving from the known world of Soviet control to an emerging, unfinished society entailed great uncertainty for many and no assured framework for expectations. Opportunities varied significantly from the Baltic States to Tajikistan. Estonia and Latvia were incorporated into the Soviet Union before World War II but they had greater commerce with the West than the other post-USSR countries. Indeed both achieved substantial growth in their market economy during the 1990s and established parliamentary democracies. Russia and the Ukraine along with Belarus (under strong Russian influence) lagged in the post-Communist decade, followed at the end by Tajikistan with its resemblance to Afghanistan in culture, economic development, and topography.

When a young person makes a transition into a new world of opportunities, risks, and constraints, as during the break-up of the Soviet Union, does he or she become a different kind of person? In life course terms, the answer would be, *It depends*. What life history of experiences, resources, and dispositions is brought to the new situation? Is the transition made with the support of other like-minded people? What kind of new environment is the person entering? Are there strong situational constraints to channel behavior? Caspi and Moffitt (1993, p. 315) proposed that “people become agentic when they encounter an unpredictable situation; whether they are impulsive or reflective, predatory or altruistic, lazy or conscientious, they are actively trying to reinstate predictability.” As Caspi and

Moffitt suggested, this situation is the type of circumstance in which individual differences of personality are most likely to play an organizing role in channeling behavior.

Caspi and Moffitt’s account meshes well with the Titma study’s empirical findings on an “agentic theme,” expressed through education, abilities, goals, and self-efficacy. These agentic influences on young people before the Soviet Union’s demise predicted their adult success, as indexed by social class, occupational status, and total earnings in the post-Communist era. But this outcome of human initiative depended on whether the new society favored such initiative and offered relevant life opportunities for self-fulfillment. Social and economic success was consistently greater in the two Baltic societies, whereas Tajikistan ranked at the bottom. It is noteworthy that economic initiatives outside the main job during secondary school proved to be predictive of entrepreneurial activities in the adult years. Again this relation turned out to be strongest in the Baltic countries, owing partly to their opportunity structure for starting new businesses. Gender inequality was least evident in these Baltic societies.

Pervasive movement in social status, up but especially down, represents a distinctive feature of life in eras of disruptive change (see Titma & Tuma, 2005). Poverty and unemployment rates increased significantly as did rates of divorce and mortality. In the western part of the old Soviet Union, the size of birth cohorts in the 1990s declined by nearly half. Despite the social flux of the times, human capital (grades, educational level, etc.) consistently predicted young adult attainment during the 6 years that followed the end of the Soviet Union, with the most pronounced effects in the Baltic States.

### *The Unification of Germany*

As liberalization pressures in the Soviet Union were pulling it apart in the late 1980s, demands for unification were building in West Germany and the German Democratic Republic, leading to the reunification of Germany in 1990. At the time, West Germany was 3 times the size of the GDR in population, and its economy, wealth, and educational-cultural institutions were appreciably greater as well. Despite such differences, the shared history of West and East Germany as well as the reach of Western media could well have blurred the expected differences.

Two major research programs in Germany have focused on the personal impact of unification—Mayer’s German Life History Study (Diewald, Goedicke, & Mayer, 2006) and Silbereisen’s (2005) research over some 20 years on social change and human development. We begin



with Mayer's sociological perspective on life course changes following the collapse of the German Democratic Republic, and then turn to Silbereisen's Jena project with its interdisciplinary perspective. The Life History project is focused on the adult years, whereas the Jena project draws on surveys as well as longitudinal data spanning the years from childhood into young adulthood. These two projects are among our most impressive long-term studies of drastic social change in human lives.

The German Life History Study was launched in 1979 by using retrospective life history interviews on a succession of birth cohorts of West German adults (1919–1921, 1929–1931, 1939–1941, 1949–1951, 1954–1956, 1959–1961, 1964, and 1971). This method of data collection enables study of past years of the life course in the absence of relevant data archives. The ability to recollect prior life history accurately is an important issue, although all longitudinal data collection relies on the accuracy of memory. Nevertheless, the dependence on long-term recall is obviously greatest in retrospective life history projects. In such studies data collection instruments are designed to maximize accurate recall.

When the Berlin Wall fell, the research team took advantage of the opportunity to extend the project to East Germany because it represented “an exemplary case for studying the life course under the conditions of extreme societal discontinuities” (Brückner & Mayer, 1998, p.154). Retrospective life history data were collected through interviews with members of four East German birth cohorts (1929–1931, 1939–1941, 1951–1953, and 1959–1961). The respondents were surveyed again in 1993 and interviewed from 1996 to 1997 to cover the entire social transformation process and its impact on the lives of men and women. The remarkable span of birth cohorts in this research reflects the teams' recognition that historical time and its correlated life experiences are important dimensions of the 20th-century life course in Central Europe.

Institutional differences between West and East Germany were observed to be very large on the eve of political and economic unification, especially in the realm of families, women, and children. State policies in East Germany provided families with access to housing, advocated equal employment opportunities for women, and offered abundant childcare, especially for working mothers. Young women in East Germany tended to marry earlier and had more children than women in West Germany, and yet they were also more likely to be employed. Introduction of a free-market system in East Germany removed support

for these family services and nearly half of all East German workplaces were lost during the first years after the fall of the Berlin Wall (Pinquart, Silbereisen, & Juang, 2004). Rates of unemployment and poverty increased sharply. Marriage and childbearing rates declined significantly at this time in East Germany, along with a substantial delay in having a second child.

Consistent with life course studies (Elder, 1998a) the German Life History Study discovered that success in the new economy of East Germany had much to do with both life stage and gender (Diewald et al., 2006). Unemployment was highest among the youngest and oldest men. In the middle-age category, men were favored over women by employers. The middle-age category included men with work qualifications who also had enough work years ahead to be retrained if necessary. As an index of a particular life stage, age combined the influence of prior experiences and acquired skills as well as the constraints of aging in the second half of the life span. Thus, prior experience with work transitions enhanced the adaptive ability of middle-aged East Germans, even in a period of socioeconomic transformation. Reentering work after a phase of joblessness depended on age status to a greater extent for women than it did for men.

Despite the social disruptions and economic hardships associated with unification in East Germany, the Life History Study found that emotionally close relationships before 1989 tended to become stronger among young people and their families in the East. The evidence shows a high level of stability in marital relationships and family networks, suggestive of a compensatory adaptation to the hard times that was observed here as well as among American families during the Great Depression in the United States (Liker & Elder, 1983), especially when marital ties were relatively strong before the crisis. However, social ties associated with work in East Germany seldom survived the unification process. Many workplaces were closed down. Observations from the German Life History Study (Diewald et al., 2006) suggest that the rapid transfer of West German social institutions to the former East German region constrained the agentic influence of individuals, unlike the liberating shift toward self-direction among young men and women who were in their 20s following the dissolution of the Soviet Union and its control structure. The demise of Soviet control placed more emphasis on individual initiative.

This portrait from the Life History Study comes from adults in social roles and their constraining influence. East German organizational and institutional models were

quickly replaced after unification by a West German model in the Eastern region. Young people in East Germany were not constrained by adult roles and enjoyed opportunities for self-direction, especially in the transition from leaving home to establishing their social and economic independence. This age group was the target of Silbereisen's Jena project on German unification, a research program focused on the years from childhood into the 20s. It collected a rich array of survey and longitudinal data on psychosocial functioning, including the qualities of human agency in adapting to social change.

Some 14 years after German unification, Silbereisen (2005) shared his reflections about the challenge of studying the developmental impact of this social transformation in his 2004 presidential address to the International Society for Behavioral Development at Ghent, Belgium. He noted that a great many errors had been made in poorly designed research to assess the resulting population change, including the comparison of birth cohorts from each region. In designing a framework for the Jena program of research, Silbereisen drew on the Oakland and Berkeley cohort studies of children who grew up in the Great Depression and were followed into the middle years of life (Elder, 1974/1999). Of particular relevance to studies of the effects of German unification, as he saw it, was the multilevel model of economic decline and recovery, the family and its adaptations to socioeconomic change, and the developing individual. He also borrowed concepts of mechanisms from this project that specified processes by which social change could make a difference in children's lives. These included the control cycle process of losing control in a social transition, which then initiates efforts to regain it. Silbereisen expressed the hope that developmental scientists in the future would be "better prepared with adequate heuristics and theories on the nature of social and political transformations and their consequences" (2005, p. 4).

The Jena project was launched with two primary research foci: (1) the influence of German unification on the timing of life events in the transition to young adulthood, such as the age at leaving school and home, and (2) on adaptations to social change—the personal as well as social resources that favor successful adaptations, including qualities of human agency, commitments, and social support. The complexity of German unification as a social change contributed to mixed findings concerning the timing of life transitions and underscored the importance of a more adequate model of the unification process. It also revealed the need for more microtheories on variables that

link social change to life course outcomes. This recognition led to the development of new models (Silbereisen & Chen, 2010) featuring perceived demands, stress, and personal control.

More attention to the mediational process highlighted qualities of human agency that were relevant to coping with social change, such as beliefs regarding one's ability to make a difference in school or work. Studies of adaptation to social change have consistently shown that qualities of human agency are instrumental in successful coping (Titma & Tuma, 2005), and a series of studies by the Jena research group provides substantial evidence of this link. In a Leipzig sample of East German adolescents, Piquart et al. (2004) observed that youth who were highly committed to the old political system were likely to experience greater emotional distress after unification, but only if they lacked a sense of their own self-efficacy. Adolescents who identified with the old system and possessed stronger beliefs in their self-efficacy prior to unification did not experience such distress. In addition, the study found that higher self-efficacy predicted a decline in psychological distress over time.

The investigators also asked whether stronger feelings of self-efficacy among young adolescents would enhance their chances for a successful transition to work in adulthood. The longitudinal study began in 1985, well before German unification and it continued from ages 12 to 21. Only the noncollege study members were included in this research on the transition to employment (Piquart, Juang, & Silbereisen, 2003). The investigators tested a model in which efficacious beliefs about academic achievement and academic success promote young adult employment and job satisfaction through career-related motivation and work aspirations. The empirical findings provided support for the causal sequence linking academic success, self-efficacy and career-related motivation to positive work life outcomes, and it is noteworthy that this sequence corresponds in many respects with those obtained in an American longitudinal study during the 2008 to 2011 economic recession (Vuolo et al., 2012). In both studies, efficacious beliefs are associated with career-related motivational striving, and stable employment during the young adult years.

Unification occurred at different times in the young lives of East Germans and had different consequences for adults, as noted in our review of findings from the German Life History Study. We might expect differing effects by age of students in the East German school system, which was radically transformed after unification. Silbereisen and his collaborators (Vondracek, Reitzle, & Silbereisen,

1999) observed a significant differential effect by age on vocational preferences. Older youth who had a number of years in the old system experienced large changes in preferences (away from state-sponsored options), whereas those at a younger age with virtually all of their education in a Western-styled system displayed no differences in preferences. Another unstudied source of differential impact would likely involve very young children and their dependence on families that experienced socioeconomic hardships and marital stress, as suggested by the life stage findings from *Children of the Great Depression* (Elder, 1974/1999).

Empirical studies of the effects of German unification in this review are based on observations over a relatively short period of the life span. What will the long-term consequences be? The early years are not necessarily predictive of the later years. As in Titma's post-Soviet cohort, the German young people and adults who fared well in the radically changed world that emerged from unification of East and West Germany tended to view themselves as agents of their own lives. And they were significantly better educated than other East Germans. In *Children of the Great Depression*, the post-Depression era of World War II and growing prosperity played a major role in the resilient accomplishments of this American Depression generation across the adult years. Hopefully, the next stage of the Jena project will follow up the lives of East Germans who experienced the social transformation of unification.

## HUMAN DEVELOPMENT IN CONTEXT

The past half-century has witnessed an increasing tendency to view human development in context by linking complementary perspectives, temporal (historical/biographical) and ecological. The temporal perspective locates individual lives by birth year and cohorts according to *historical time*, and depicts their evolving biography across age-graded events, or *social time*. The ecology of a specific historical time is defined by distinctive institutional arrangements and cultural meanings. For individuals, the ecology of human development varies from such macrolevel attributes to the microlevel of social interaction across life stages in successive birth cohorts. The integration of these complementary perspectives represents a defining feature of the multilevel life course framework proposed in this chapter.

The two perspectives emerged at different times in studies of human development during the 20th century and only recently have converged in life course models.

The temporal cohort perspective on life patterns and human development first appeared in the mid-1960s through research based on birth cohorts, especially in the seminal work of Ryder. An early cohort-historical study, *Children of the Great Depression* (Elder, 1974/1999), used longitudinal samples to investigate the lifelong impact of Depression hard times on Californians born in the 1920s. However, it paid little attention to the children's ecology, other than to note regional variations in crisis. The study highlighted the developmental importance of taking historical time into account in longitudinal studies of children. But its nature remained largely unspecified beyond the economic hardship of families and children.

During this lengthy study of Depression children and their adult lives, Bronfenbrenner carried out an ecological study of socialization in societies with contrasting political systems, the United States and the USSR. In his book *Two Worlds of Childhood*, Bronfenbrenner (1970) observed that peer groups of students in the Soviet Union tended to reinforce adult approved patterns of conduct, whereas in the United States they more often exerted a contrary influence. This work was not informed by a perspective that locates children in historical context and follows them into adulthood. Consequently, it would not have been sensitive to the subsequent years of transforming change in the Soviet Union. In his now classic book *The Ecology of Human Development*, Bronfenbrenner (1979) drew on longitudinal studies of child development in historical times, although his ecological framework did not include a temporal perspective on the environment and individual.

To date, the most compelling research integration of these perspectives has been made by Sampson's program of Chicago research that evolved from the Project on Human Development in Chicago Neighborhoods during the early 1990s. He invested heavily in the conceptualization, measurement, and analysis of neighborhoods and their outcomes. Data sources include longitudinal samples of young people, community surveys, systematic observations of neighborhoods, and network assessments, among others. Sampson's contributions to the contextualization of human development reflect long-standing interests in community and criminology, as well as his longitudinal study of crime and the life course with Laub (Laub & Sampson, 2003; Sampson & Laub, 1993). Contemporary advances in studying the context of human development led Sampson (2012, p. 24) to propose that the 21st century may become "the era of context."

Sampson (2012) vividly documents the payoff for understanding "lives in context" in *The Greatest City*,

a study of Chicago neighborhoods and their residents over a decade. Virtually all Chicago neighborhoods in his study, he found, were connected across the years through the movement of people, families and children, the old and the young. This movement typically linked neighborhoods of advantage as well as those of disadvantage, thereby perpetuating their inequality across historical time and the generations. Sharkey extended the Chicago research with Elwert (Sharkey & Elwert, 2011) by using nationwide longitudinal data to investigate the effects of neighborhood and family on cognitive ability across the generations. The study shows neighborhood and family to be “closely intertwined” environments that jointly influence the “developmental trajectories of individuals in ways that extend across the generations.”

The interplay of multilevel contexts and human development has come a long way toward recognition of the centrality of this perspective in the field of developmental science. The flourishing study of the life course and human development is one example of such progress, and Bronfenbrenner’s (Bronfenbrenner & Morris, 2006) ecology of human development is another in studies of neighborhood influences. Both fields emerged from awareness of the neglected social world of children in developmental studies. The historical context and ecology of development still remain largely unintegrated in research, although we see encouraging movement toward their integration in this chapter and volume.

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## CHAPTER 3

# Children's Parents

MARC H. BORNSTEIN

States Parties agree that the education of the child shall be directed to:

- (a) The development of the child's personality, talents and mental and physical abilities to their fullest potential . . .
- (b) The development of respect for the child's parents.

—Article 29, Convention on the Rights of the Child United Nations Children's Fund (United Nations General Assembly, 1989)

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## INTRODUCTION

Childhood is the time when we forge our first social bonds, first learn how to express and read basic human emotions, and first make sense of the physical world. In childhood, individual personalities and social styles also first develop. Children's parents normally lead them through all of these dramatic firsts (Bornstein, 2002a). Evolutionary theory distinguishes between bringing a new individual into the world and caring for an existing one, childbearing versus

childcaring (Bjorklund, Yunger, & Pellegrini, 2002). Whereas species lower in the phylogenetic hierarchy are principally childbearers, mammals such as *Homo sapiens* also are devoted childcarers perhaps because the investment in a small number of offspring is great or young human children are totally dependent on their parents. Parents are fundamentally invested in their children: their survival, their socialization, and their education.

Each day approximately three-quarters of a million adults around the world experience the joys and rewards as well as the challenges and heartaches of becoming a new parent (<http://www.worldometers.info/world-population/>). Each reader of this page has had the experience of being

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parented, and many of us relive the experience when we parent our own children. Parenthood is culturally normative, and most adults become parents (86% of women and 84% of men among adults ages 45 and older; Child Trends, 2002) only 3 years into their relationship (Claxton & Perry-Jenkins, 2008). Yet, parenting remains a somewhat mystifying subject about which few people agree, but about which almost everyone has opinions. That said, parenting science is enjoying popularity today as never before, and in consequence a surprising amount of solid science is accumulating about children's parents. As a testament to increasing demands for evidence-based parenting and to bring order to existing information, the first formal chapter on parenting per se appeared in the 2006 sixth edition of the *Handbook of Child Psychology*. The present chapter on children's parents updates and refocuses that treatment.

Historically, theorists of many stripes looked to parents as those actors believed to influence children the most, although childrearing is acknowledged to involve a wider cast of personalities. Children's parents are tasked with preparing them for the physical, economic, and psychosocial situations that are characteristic of the environment and culture in which they must survive and, it is hoped, thrive. In doing so, parents multitask; parenting is more than feeding and protecting and teaching and being emotionally available. Parenting requires planning, organizing, and executing (arranging birthday parties, identifying summer camps, finding doctors), all of which consume mental and physical energy and time. Parenting is disambiguating moment-to-moment novel, complex, rapidly changing, uncertain information associated with children. Parenting is expecting of oneself and being expected by others to caregive consistently, appropriately, and effectively. Parenting is being highly motivated to succeed at these many assignments.

Parenting blends tuition and intuition. Adults already know (or think they know) something about parenting by the time they first become parents (Civitas Initiative, Zero to Three, & Brio Corporation, 2000). Indeed, human beings appear to possess some intuitive knowledge about parenting (Papoušek & Papoušek, 2002), and certain characteristics of parenting may be wired into our biological makeup (Barrett & Fleming, 2011; Bornstein, 2013a). For example, people almost everywhere speak to infants even though they know that babies cannot understand language, and people even speak to babies spontaneously in a speech register especially reserved for them. However, human beings also acquire important knowledge of what it means

to parent children through generational, social, and media images of parenting, children, and family life, knowledge that plays a significant role in helping people formulate their parenting cognitions and guide their parenting practices. For these reasons, parents from different cultures differ in their opinions about all manner of parenting- and child-related issues, such as the relevance of competencies specific to their children's successful adjustment, the ages they expect children to reach different developmental milestones, and so forth (Bornstein & Lansford, 2010; Goodnow, 2010). Direct experiences with children and self-constructed ideas also help formulate parenting attitudes and actions. This chapter on children's parents applies the prevailing relational developmental systems perspective to parent-child relationships (Bronfenbrenner & Morris, 2006; Lerner, 2006; Lewontin, 2005; Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1).

For their part, children seem primed to profit from parental care. Early childhood has long been thought to be a period in the life cycle when humans are especially malleable, a time when they are open to influences they will carry forward—even long after they have left their family of origin. Childhood characteristics thought to be especially plastic to parent-provided experiences range from the language children speak and the foods they prefer to the academics they achieve and the social customs they retain to the politics they follow and the religious beliefs they profess.

What forces affect when and how children develop? It has been observed that only two kinds of information are transmitted across generations—genes and culture (Dawkins, 1976). Children's parents are the “final common pathway” of both. So, this question goes to the heart of much of parenting science. Of course, children's genetic makeup affects their characteristics as it does how children are treated by their parents. However, there is unassailable evidence that parenting can and does guide child development, and the burgeoning scientific approach to parenting sheds bright light on how and why parental practices shape child outcomes (Belsky & de Haan, 2011; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). Children's inherited dispositions and their parents' childrearing are reciprocally interwoven and function jointly.

In surveying central issues concerning children's parents, this chapter pursues the following course. First, the chapter addresses the two faces of parenting; that is, parenting as a phase of adult development, and parenting as an instrumental activity vis-à-vis children. Parents are concerned about themselves as parents, and parents are



concerned about their children's everyday well-being and long-term development. Next, the chapter provides a brief overview of thinking and research about parenting. Here, three topics are touched on: the origins of parenting studies, theories of parenting, and future directions in parenting research. The next two sections of the chapter address, *in seriatim*, parents, the principal actors in human caregiving, and, then, cognitions and practices that principally make parenting public. With the actors, attitudes, and actions associated with children's parents in mind, arguments for the meaningfulness of parenting effects are then evaluated. Here, correlational designs, and various kinds of experiments that demonstrate the value of parenting are discussed as are challenges to parenting effects from behavior genetics and group socialization theory. Parents and parenting vary impressively, and determinants of parenting are a major issue in the field; the multicausal origins of parenting in characteristics of parents, characteristics of children, and contextual characteristics are explored next. The chapter closes with some practical issues, for example neglect, abuse, and parenting interventions, before reaching more general conclusions.

### Parenting for Parents and for Children

Parenting is Janus-like: It is a formative status in the life course with consequences for parents themselves, and it is also a responsibility whose primary object of attention and action is the child. Human children cannot and do not grow up as solitary individuals, so parents want to know how best to take advantage of the opportunities parenting affords as well as cope with parenting's unrelenting demands. Some consider this instrumental construal of parenting a lifelong 24/7/365 job.

Parenting is most certainly a functional activity, but parenting is pleasures, privileges, and profits as much as frustrations, fears, and failures. Sociobiological theories of evolution assert that all species are compelled to see their childbearing (and childrearing) succeed on the argument that in that way genes ensure their immortality (Dawkins, 1976). However, there is much more to human parenting than biological continuity. Parenting has its intrinsic rewards. According to a nationwide survey conducted by the National Center for Children, Toddlers, and Families, more than 90% of parents say that, when they had their first child, they not only felt "in love" with their baby, but were personally happier than ever before in their lives (Civitas Initiative et al., 2000). Using a strategy of converging evidence, Nelson, Kushlev, English, Dunn, and Lyubomirsky

(2013) assessed whether parents evaluate their lives more positively than do nonparents, feel relatively better than do nonparents on a day-to-day basis, and derive more positive feelings from caring for their children than from other daily activities. Parents (conspicuously fathers) reported relatively higher levels of happiness, positive emotion, and meaning in life than did nonparents. Parents find interest and derive considerable and continuing personal reward in their relationships and activities with their children. Parents report that spending time with their children, especially in recreation or educational childcare, ranks among their most enjoyable activities (Krueger, Kahneman, Schkade, Schwarz, & Stone, 2009). Notably, mesocorticolimbic dopamine is involved in both reward-related learning and mammalian maternal caregiving (Insel, 2003).

For many, parenthood enhances psychological development, self-confidence, and a sense of well-being. Parenting translates into a constellation of new trusts, provides opportunities for enrichment and wisdom, and unlocks a panorama on the "larger picture" of life. Parenthood also gives adults ample occasion to confront new challenges and to test and display their competencies (Crittenden, 2004). Markus, Cross, and Wurf (1990) learned that feelings of competence as a parent constitute a highly common aspect of the self as desired by adults. Parenthood is known to alter the adult brain (Bornstein, 2013a; P. Kim, Leckman, Mayes, Feldman, et al., 2010; Leuner, Glasper, & Gould, 2010). Furthermore, from early infancy children recognize their parents, prefer their sights, sounds, and scents, and over the course of just the first year of life develop deep and lifelong attachments to sensitive and responsive parents (Bornstein, Arterberry, & Lamb, 2014). Filial piety prescribes how children should behave toward their parents: Children who perceive their parents as warm and rational develop a reciprocal filial piety that entails natural intimate affection and gratitude toward their parents, are emotionally and spiritually attentive to them, offer physical and financial care as their parents age, and so forth (Huang & Yeh, 2013). In essence, then, children's parents receive a great deal "in kind" for their hard work and commitment: They are often recipients of unconditional love, and through their children they access immortality.

That said, although marriage per se is associated with reduced morbidity and mortality (Kiecolt-Glaser & Newton, 2001), meta-analysis reveals that parents report diminished satisfaction compared with nonparents (most pronounced among mothers of infants) and a negative association between marital satisfaction and number of children, perhaps ascribable to role conflicts and restrictions

of freedom (Twenge, Campbell, & Foster, 2003). Furthermore, parenting is an expensive proposition (estimates from the U.S. Department of Agriculture reveal that middle-income husband-wife families can expect to spend roughly \$300,000 to rear a child to age 18; Lino, 2013); becoming a parent generates depression in many new mothers and fathers (Miller, 2002; Paulson & Bazemore, 2010) and erodes some domains of cognition (Brett & Baxendale, 2001; Ellison, 2006); and parents often judge their own parenting more positively than do their children (Bögels & van Melick, 2004; Gaylord, Kitzmann, & Coleman, 2003). The status of parenthood for parents and its implications for adult development, marriage, and family life constitute subjects of continuing debate (see Bhargava, Kassam, & Loewenstein, 2013; Nelson, Kushlev, Dunn, & Lyubomirsky, 2013). Two dismaying truths about parenting are that children really know not what their parents have done for them unless and until they become parents themselves and, poignantly and paradoxically, only profoundly despondent parents will know how the drama of their child's life course ultimately unfolds.

Surveying three approaches to measuring parents' well-being—comparing parents to nonparents, assessing parents' well-being across the transition to parenthood, and comparing parents' well-being when they are with their children versus when they are not—Nelson, Kushlev, and Lyubomirsky (2014) concluded that the relation between parenthood and well-being is complicated. Parents may experience happiness and joy when children are seen to improve the meaning of life, satisfy their basic needs, enhance their positive emotions, and diversify their social roles; however, parents may be unhappy if and when they experience negative emotions, financial difficulties, sleep disorders, and unsettled marriages.

More commonly, parenting is defined by its instrumental character, as acts of providing for and supporting the biological, physical, intellectual, emotional, and social development of progeny. Parenting presents the unique prospect of contributing to the development of a new life, and if there are universal human values, it is probable that nurturing (and not abusing) children falls among them. The conception of parenting as a set of functions expands the discussion beyond biological parents to embrace other related and nonrelated child caregivers (grandparents, adoptive parents, or other "carers") who may also centrally engage in parenting (Leon, 2002). This chapter focuses on children's parents and their parenting, but does not eschew significant others in the lives of children (or children's own contributions to parenting and so their development;

Lerner, Lewin-Bizan, & Warren, 2011). Animal research offers a rather barebones description of parenting behaviors as encompassing expenditures of time and energy, for example, in carrying, thermoregulating, and nourishing offspring. A functionalist approach to human parenting broadens the scope of caregiving considerably in that it is desirable to promote traits in human children that will lead to their becoming adults who manage well within the requirements of the social groups among whom they live.

Becoming a parent is a transforming experience (L. Bornstein & Bornstein, 2008; Nazarinia Roy, Schumm, & Britt, 2014). New parents change in many aspects of their life (e.g., self-efficacy expectations, gender roles, personal control, anxiety, and depression). Freud reputedly counted bringing up children as one of the three "impossible professions" (the other two being governing nations and psychoanalysis). Some parents more fully commit to the status and responsibilities of parenting than others (Baumrind & Thompson, 2002). In the end, children's parents have the "means, motive, and opportunity" to care for them, and commitment may rival in importance the ways parenting is expressed. Parenting children is enjoyable and educational, it is constructive and productive, and it is answerable and daunting.

### Parenting Theory and Research in Brief Overview

How did studies of children's parents begin, and how did they arrive at the state we find them today? What principles guide contemporary theory and research in parenting? A glance backward and a short excursion into currents of thinking about parenting provide answers to both questions. Furthermore, informed perspective on future directions in the field of parenting studies may help to guide the reader in how best to understand the ensuing accounts of parents, their cognitions and practices, and their effects, as well as their origins.

#### *A Glance Backward at How Parenting Study Got to Be the Way It Is*

Child rearing has traditionally been viewed as fundamental to societal well-being, and so cultures throughout history have paid considerable attention to parenting (French, 2002). Written appraisals of parenting date back at least to ancient Egypt, the Code of Hammurabi, and the pre-Socratics. In the *Laws*, Plato (ca. 355 BC) theorized about the significance of parenting. Over succeeding centuries, the musings of philosophers and the sermonizing of clerics—as well as folk wisdom—have been replete with propositions, convictions, and aphorisms concerning

what kinds of child training best ensure social order. Historians, anthropologists, and sociologists of family life have documented evolving patterns of childcare (see Stearns, Chapter 20, this *Handbook*, this volume). However, a formal understanding of parenting seems to have its beginnings in attempts by philosopher, educator, and scientist parents to do systematically what parents around the world may do naturally every day: Observe their children. Such reflections on child rearing entered the literature in the form of diary descriptions of children in their natural settings written by their own parents, referred to as “baby biographies” (Darwin, 1877; Hall, 1891; Jaeger, 1985; Preyer, 1882; Rousseau, 1762; Wallace, Franklin, & Keegan, 1994), and they still appear from time to time (Lamott, 2013; Mendelson, 1993; Stern, 1990). These rich observations had many salutary effects for parenting, heightening awareness in parents and inciting systematic studies of children and how to channel child development. It was not until the 20th century, however, that parenting became a focus of scientific study.

On account of extraordinary high rates of child mortality, parents in early times may have cared for but resisted emotional investment in the very young (Dye & Smith, 1986; Stearns, Chapter 20, this *Handbook*, this volume), an orientation that sometimes persists where especially dire circumstances reign (Scheper-Hughes, 1989). One historian theorized that parents have generally improved in their sentiments toward and treatment of children because parents have, through successive generations, changed in their capacities to identify and empathize with the special qualities of childhood (deMause, 1975). Today, advice on parenting abounds. It begins well before the birth of a child in “preconception care,” where the goal is to reduce risks to women, fetuses, and neonates by optimizing maternal health and knowledge before planning and conceiving (American College of Obstetricians and Gynecologists, 2005; Centers for Disease Control and Prevention, 2013b). There’s even an iPad app for that: *Pregnancy Week to Week* features images that track the development of a new baby, a timeline and organizer for physician visits and to-dos, and even a kick counter. Parent guidance overflows in professional compendia that provide comprehensive medical treatises of prenatal, perinatal, and postnatal development, such as *A Guide to Effective Care in Pregnancy and Childbirth* (Enkin, Keirse, Chalmers, & Enkin, 2000) and *The A to Z of Children’s Health: A Parent’s Guide from Birth to 10 Years* (Friedman, Saunders, & Saunders, 2013); in classic how-to books, such as *Dr. Spock’s Baby and Child Care* (Spock & Needlman, 2013), *Your Baby and Child*

(Leach, 2012), and *What to Expect When You’re Expecting* (Murkoff & Mazel, 2008); in practical guides, such as *The 10 Basic Principles of Good Parenting* (Steinberg, 2005) and *Teach Your Children Well* (Levine, 2013); in evidence-based academic compilations, such as the *Handbook of Parenting* (Bornstein, 2002b) and *Parenting: A Dynamic Perspective* (Holden, 2009); as well as innumerable popular periodicals that overflow magazine racks in supermarkets, airports, and bookstores.

### *Parenting Theory and Research in Perspective*

Various theories in philosophy and psychology have focused on parenting or appeal to parenting. The ensuing recapitulation follows Maccoby (1992) who observed that, at first, two overarching theories presumed to encompass most of what was significant about the socialization of children, psychoanalysis and behavior theory, but these twin sweeping perspectives yielded over time to narrower views specific to developmental domains or child ages. Early work sought direct connections between parental practices and child outcomes, whereas current work focuses on processes that may mediate the ways parental cognitions and practices operate to affect children and to identify key moderators of those process pathways. Parents were once seen primarily as trainers or transmitters of culture and children as empty vessels who were gradually filled up with necessary and appropriate social repertoires; today, complex models of socialization involve relational and transactional dynamics in developmental systems (Bornstein, 2009; Lerner et al., 2011).

Sigmund Freud (1949), the father of psychoanalytic theory, asserted the principal role of children’s parents in their development. Freud hypothesized that the parent’s personality determined the nature of parenting, the parent-child relationship, and the child’s development as children “internalize” models of their parents and “introject” their values. Another consistent theme among psychoanalytic theorists was that, if parents’ emotional needs had not been met during the course of their own development, then their neuroses would be reflected in their parenting (Holden & Buck, 2002). Anna Freud (1955/1970) described mothers who rejected their children, sometimes due to psychosis but more often because of their own neurotic conflicts. Likewise, Winnicott (1948/1975) and Spitz (1965/1970) detected the roots of aggressive, impulsive, immature, self-centered, and self-critical caregiving in parents’ own experiences. Psychoanalysis confined itself largely to theorizing, however, and failed to foster much systematic basic research (Cohler & Paul, 2002).

Early empirical studies of parenting were advanced from a behaviorist perspective and consisted of straightforward demonstrations that specific child behaviors (e.g., in babies smiles or vocalizations) could be conditioned or extinguished (Rheingold, Gewirtz, & Ross, 1959). From John Watson (1924/1970) to B. F. Skinner (1976), attempts were made to redefine socialization in learning theory terms. Children's aggression, dependency, gender typing, and identification with parents were common foci of behavioral study. Miller and Dollard (1941) reformulated hypotheses derived from psychoanalytic theory into simple testable behavior-theoretical propositions. These efforts to predict complex outcomes in children from parental socialization proved less than successful, however. Sears, Maccoby, and Levin (1957), for example, found few connections between parental child-rearing practices (as reported by parents in interviews) and independent assessments of children's personality.

Many later-emerging theories of child psychology also placed strong emphasis on parents. According to scaffolding theory, for example, cognitive and social development occur mainly in interactive contexts with trusted, more competent partners who do not reward, punish, or correct children so much as provide structures for learning that increase the likelihood of children's succeeding in their own attempts to learn. Parents who foster their children's development arrange circumstances so that the demands of a situation fall beyond the child's "zone of actual development" into the child's "zone of proximal development." According to this Vygotskian formulation (Vygotsky, 1978), the parent, being more advanced than the child, raises the child's level of competence through their reciprocal interactions.

Other prominent theories emphasize the active role of the child in parent-child interaction. In one view, children acquire new behaviors without needing to perform them overtly with reward, but merely by observing them being performed by nurturant and powerful parents (Bandura, 1989). A central tenet of this social learning theory posits that observing the actions of their caregivers is the primary means by which children learn about the world. In this way, children absorb the beliefs and behaviors of these key figures in their lives (Maccoby, 1959). What children imitate in others, what they remember, and how they process what they remember also depend on characteristics of the child, for example their level of development. Along these same lines, Piaget's (1936/1952) interactionism theorized that children use parental input in learning rather than parental input *per se* determining what children learn.

Bowlby (1969) infused an ethological perspective into socialization, contending that through their reciprocity parent and child develop a mutual attachment. Attachment theory postulates the formation of internal working models or representations of the attachment relationship, schema that tint future interpersonal relationships (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Sroufe, Egeland, Carlson, & Collins, 2005). What is gained from a child's attachment experience is the quality of the relationship with a parent (Ainsworth, Blehar, Waters, & Wall, 1978). Sensitive and responsive parenting provides a secure base from which children develop cooperation, self-regulation, and social initiative as well as internalize values, explore the world, and engage socially with others (Bugental & Grusec, 2006; Sled & Fonagy, 2012).

Finally, in the view of family systems theory, what transpires between parent and child is governed, not only by the characteristics of each individual, but also by patterns of transaction between them and others (Bornstein & Sawyer, 2005; Minuchin, 1985). Parent and child develop in a system that functions as an organized whole, composed of interdependent elements or subsystems that include individuals as well as relationships among individuals. Each element within the family both affects and is affected by other elements; a change in any one can lead to changes in others. Thus, the structure and organization of relationships across the family affect the quality of the relationship between any two family members. For example, each parent's relationships with his or her own parents affect their ability to coparent their child. Similarly, a major life transition for one family member is likely to affect other family members. How responsive a mother or father may be at any given moment is determined, not only by that parent's characteristic warmth and the child's characteristic responsiveness, but also by the patterns they have created jointly between them and with others.

A full family systems approach embeds parenting in the context of all relationships within the family as well as relationships between the family and its many larger social contexts so that theory and empiricism circumscribed to dyads is *perforce* partial and insufficient to explicate family interaction patterns. Parents behave one way when the whole family is together but another when each parent interacts one-on-one with their young child (Cox & Paley, 2003). In family systems theory, interconnected subsystems are also organized hierarchically; an asymmetrical nature in the parent-child relationship is necessary, especially early in child development (Kochanska & Aksan, 2004; Maccoby, 1992), but as children grow older, they



rely more on themselves and less on parents (Eisenberg & Morris, 2003); and family members are always in the process of developing, so concomitantly the family system is always in the process changing. Yet, like other living systems, families continually strive to attain a dynamic balance amid experiences of growth and maturation on the one hand and needs for consistency on the other.

Many theoretical accounts for how and why children's parents caregive have been proposed (Bornstein, Mortimer, Lutfey, & Bradley, 2011; Bugental & Grusec, 2006). For most theories, it is primarily through parental example, control, teaching, and so forth that children are shaped and the adult culture is passed down to the next generation. Parents are the primary agents who set the agenda for what children learn and who administer the rewards and retributions that strengthen desired characteristics and weaken undesired ones in children. Additional theoretical formulations acknowledge multiple roles of the child in continuing interaction with the parent. All theories centrally assume that, even though socialization and resocialization can occur at any point in the life cycle, childhood represents a particularly susceptible period when enduring personality attributes, social skills, and cultural values are inculcated, and children's parents robustly influence them even if children's development remains pliable to other circumstances at later times.

### ***Looking Ahead to Where Parenting Theory and Research Are Going***

As this chapter proceeds to show, researchers know a lot, but still not nearly enough, about parenting. Some key questions that must be addressed in parenting theory concern the further specification of processes by which parents' cognitions and practices promote or inhibit development in children and the multiple moderators that condition their effects (Bornstein, 2013b; Bornstein, Bradley, Lutfey, Mortimer, & Pennar, 2011; Patterson & Fisher, 2002). By the other side of the same token, theorists are charged to explain how children and their perceptions of parenting impact parents (Lansford et al., 2010). Successful parenting theories will likely have two other key characteristics: They will be based on constructs that are readily operationalized, and they will specify effective means of assessment.

Measurement is an importunate challenge in parenting science. Parenting is complex, nuanced, and difficult to evaluate, and the parenting literature is replete with mixed findings. Empirically there is widespread lack of agreement regarding which features of parenting are most

important; which assessment methodologies may be most suitable and valid (observations, tests, and interviews and questionnaires have differing strengths and limitations; Bögels & van Melick, 2004; Collett, Gimpel, Greenson, & Gunderson, 2001; Dadds, Maujean, & Fraser, 2003; Gaylord et al., 2003; O'Connor, 2002; Reitman, Rhode, Hupp, & Altobello, 2002; Rhoades & O'Leary, 2007); and whose reports are best representative of parenting (Achenbach, 2012; Barry, Frick, & Grafeman, 2008; McLeod, Weisz, & Wood, 2007). As lamented by Dix and Gershoff (2001, p. 138), a lack of validity and reliability information gives rise to "inconsistent findings, wasted effort, and slow progress" in parenting research. Related empirical concerns increasingly acknowledge the need to assess invariance across parent gender, socioeconomic status, ethnicity, and culture (Adamsons & Buehler, 2007; Furman & Lanthier, 2002; Huang et al., 2011; Locke & Prinz, 2002; Senese, Bornstein, Haynes, Rossi, & Venuti, 2012; Stolz, Barber & Olson, 2005).

Additional challenges for the future are to recognize and rectify that, up to now, the rapidly developing discipline of parenting research has focused too narrowly on mother-child relationships rather than multiple family relationships; on selected topics such as attachment to the near exclusion of others such as religion; on normative nuclear families when the present-day world is populated with a bewildering panoply of family compositions (shot-gun cohabitations; unwanted pregnancies; out-of-wedlock births) and circumstances (families affected by military deployment, state enforcement of fertility policies, and yo-yoing in and out of poverty); and on parenting in the minority Western, educated, industrialized, rich, and democratic developed world rather than the majority developing world (Bornstein, 2010; Henrich, Heine, & Norenzayan, 2010; Ganong, Coleman, & Russell, Chapter 4, this *Handbook*, this volume; Tomlinson, Bornstein, Marlow, & Swartz, 2014). Quizzed, parents think a broad swath of basic developmental research is interesting and important but would support more funding for practical issues such as speech and language, developmental disorders, and adaptation to childcare (Johnson & Lloyd-Fox, 2008).

Future cutting-edge designs in parenting science will account for assortative mating, control one parent in analyzing effects of the other parent, covary confounding third variables, move beyond cross-sectional approaches that leave the direction of parenting effects ambiguous, identify parenting influences separate from putative genetic confounds, and so forth (see, e.g., Kenny & Ledermann, 2010). Likewise, increasing rigor and sophistication are



expected of intervention research in parenting (Powell, 2013). Parenting is a multilevel phenomenon and will be better understood eventually by converging evolutionary, genetic, biological, comparative, behavioral, and cultural perspectives. Another pervading critique of contemporary parenting science is that research in the field has not yet adequately confronted the subtle practical complexities of everyday parenting. Using nonparticipant unobtrusive naturalistic observational methods, Radesky et al. (2014) captured frequency, duration, and modality of mobile device use versus caregiving of caregivers of young children eating in fast food restaurants. Caregivers who were highly absorbed with their devices responded harshly to child misbehavior.

The imperfect situation of contemporary parenting research is ripe for revolution and evolution. In the meanwhile, the account of children's parents that follows must be understood in light of the extant literature, and in weighing the ensuing survey the reader is best informed by a clear understanding of these many constraints and shortcomings. Still others are exposed as successive topics are tackled.

Parenting is not an activity people normally think of as being especially "scientific." Folks just seem to parent, without giving it all that much thought. Like most things in life, however, better parenting benefits from greater knowledge and understanding which in turn depend on theory and research. Happily, there is a science of parenting with developing theory and growing systematic research behind it. The contemporary parenting literature, however inadequate and incomplete, is bursting with thousands of studies. This chapter reflects that consolidating science of parenting.

## PARENTS

The majority of children throughout the world grow up in family systems with more than one significant parenting figure guiding more than one child's development at a time; yet the research literature usually focuses on first-borns and first-time mothers. Biological and adoptive mothers and fathers are children's acknowledged principal caregivers. However, parents are not the only agents who normally contribute to the upbringing of children. Big brothers and sisters (Zukow-Goldring, 2002) and other members of the extended family (P. K. Smith & Drew, 2002) also play important parts in caregiving. Outside the family, peers (J. R. Harris, 1995, 1998; Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*, this volume) influence children's development, and now, as historically, children

have been regularly tended by nonparental, nonfamilial care providers—slaves and nurses, daycare workers and metaplot—whether in family daycare at home, daycare facilities, or fields (Burchinal, Magnuson, Powell, & Hong, Chapter 6, this *Handbook*, this volume; Clarke-Stewart & Allhusen, 2002; Powell, 2008). In short, many individuals "socially" parent children (Leon, 2002). This chapter is largely circumscribed to children's parents, although for completeness sake nonparental caregiving is briefly described.

## Mothers

Mammals tend to be devoted child carers (Bjorklund et al., 2002), and almost all mammalian species are matrilocal, the norm in mammalian care falling to mothers (Clutton-Brock, 1991; E. O. Wilson, 1975). Trivers (1972, 1974) acknowledged the biological reality that in land-dwelling mammals after copulation, the female is left in physical possession of the embryo. Even if females lay fertilized eggs almost immediately, males still have time to abscond; females have the decision of whether to leave the young to certain death or stay, care for, and rear/raise them. On this account, maternal care is much more common than paternal care (in mammals, males provide care in fewer than 5% of species; Moller, 2003). Even among species where males show considerable parental altruism, they commonly do less work than females and vanish more quickly (E. O. Wilson, 1975). Among human beings, fathers may withdraw from their children when they are unhappily married; mothers typically do not (Kerig, Cowan, & Cowan, 1993), and one finds many more non-resident dads than moms (Sorensen, 1997). Mothers and fathers do not necessarily share the same "investments" in parenting (Geary, 2000). Women are primarily responsible for home and family, tend to be more interested in infants and caregiving activities, and are conceded to carry a heavier burden in routine parenting (Barnard & Solchany, 2002; Calzada, Eyberg, Rich, & Querido, 2004; P. Kim et al., 2013; Maestripieri & Pelka, 2002; Metsäpelto & Pulkkinen, 2003; Verhoeven, Junger, Van Aken, Deković, & Van Aken, 2007). According to life history theory, maternal versus paternal parental investment becomes manifest in the trade-off between mating and parenting (Draper & Harpending, 1982; Mascaro, Hackett, & Rilling, 2013). Given that organisms have finite amounts of time, effort, and energy to maximize fitness (the ability to both survive and reproduce), evolution optimizes allocation of these resources in males and females toward one or the other.

Human cultures distribute the tasks of childcare in different ways. Even if fathers' social and legal claims on and responsibilities for children were preeminent historically (French, 2002), most people agree that mothers (and female relatives) normally play the central role in child rearing (Barnard & Solchany, 2002; Civitas Initiative et al., 2000; de Rosnay & Murray, 2012). As in most mammalian species (Briga, Pen, & Wright, 2012), cross-cultural surveys and meta-analyses of the human research literature consistently attest to the primacy of (biological or adoptive) females in child rearing. Analyzing data from 186 societies worldwide, Weisner and Gallimore (1977) found that in the vast majority mothers (and female adult relatives and female children) served as the primary caregivers of infants and young children. In the United States, where fathers are moving to provide more care to their infants and young children, fathers still do considerably less baby tending than mothers (Lareau & Weininger, 2008; Pleck, 2012). Observations of parental care in preindustrial traditional societies where social customs center on equality among group members reveal the same pattern found in modern and Western nations. In a hunter–gatherer society, the Aka (Central African Republic), fathers provide more direct care to their children than do fathers in any other society that has been studied (Hewlett, 1988, 1992). Nevertheless, during the course of the day, “the father would on average hold his infant for a total of 57 minutes while the mother would hold the infant 490 minutes” (Hewlett, 1988, p. 268). The maternal role is better articulated and defined than is the paternal role. The online site Insure.com uses household duties to calculate “salary figures” for mothers and fathers by referencing occupational wage data from the U.S. Bureau of Labor Statistics. The 2013 Mother’s Day Index estimated the dollar value of mothers’ responsibilities at \$59,862 and the Father’s Day Index that for fathers at \$23,344. In their own life course, women are generally afforded more opportunities to acquire and practice skills that are child centered. Often, indeed, mothering helps to interpret and condition fathering, and mothers frequently serve as “gatekeepers” to children’s fathers and other caregivers encouraging or discouraging their involvement in child rearing (Allen & Hawkins, 1999; Cannon, Schoppe-Sullivan, Mangelsdorf, Brown, & Sokolowski, 2008). Seven language families are hypothesized to have formed an ancient Eurasiatic superfamily that is supposed to have arisen from a common ancestor over 15,000 years ago; the term *mother* is one of only 23 words that have remained associated with their particular meanings since the end of the last ice age (Pagel, Atkinson, Calude, & Meade, 2013).

For all these reasons, theorists, researchers, and clinicians have historically concerned themselves preponderantly with mothering, rather than parenting generically. Mothers and mothering are investigated much more often and comprehensively than fathers and fathering. In consequence, a more extensive body of information has developed about children’s mothers than about their fathers or children’s other caregivers. Western industrialized nations have witnessed increases in the amount of time fathers spend with children (Gauthier, Smeeding, & Furstenberg, 2004; Pleck, 2012); in reality, however, fathers still typically assume little responsibility for (especially early) childcare and rearing, and fathers are still primarily helpers to mothers (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000). According to regular reports from the American Time Youth Survey, conducted by the U.S. Bureau of Labor Statistics, mothers (even those who work fulltime) spend about twice as much time as do fathers in child caregiving of all sorts (Guryan, Hurst, & Kearney, 2008), and similar ratios are common in many different lands (see Bornstein, 2006). In both traditional U.S. American families (Belsky, Garduque, & Hrcir, 1984) and nontraditional father primary-caregiver Swedish families (Lamb, Frodi, Frodi, & Hwang, 1982), parental gender exerts a greater influence on childrearing than do parental role in the family or employment status.

### Fathers

Some contemporary observers point to continuing and widespread abrogation of responsibility by fathers (Blankenhorn, 1996, 2009; Popenoe, 2009), whereas others note fathers’ increasing involvement with their children (Gray & Anderson, 2010; Pleck, 2012). However, fathers’ involvement remains much lower than mothers’ (Craig, 2006), as noted especially when children are very young (Rhoads & Rhoads, 2012). In nonhuman animal species, paternal behavior is common among birds (90%), but very rare among mammals, if somewhat higher in primates (Moller, 2003). There are, of course, many examples of devoted fathers in the animal kingdom, including sea horses (which gestate their young), Antarctic emperor penguins (which incubate eggs through dark and bitter winters), and rodent prairie voles (which are notoriously paternal). Generally speaking, fathering goes along with social monogamy (Fernandez-Duque, Valeggia, & Mendoza, 2009; H. J. Smith, 2005). Our closest living relatives, chimpanzees and bonobos, provide no meaningful paternal care; given their respective mating

systems and troop life, males may not even be aware which are their offspring, much less devote time and attention to them (Bales & Jarcho, 2012). Fathering among *Homo sapiens* is therefore unique in the primate genus, and the paternal role appears more volitional and discretionary and less scripted than the maternal role (Cabrera et al., 2000; McBride, Schoppe, & Rane, 2002). Human paternal care exhibits considerable cultural and longitudinal variation, an indication of how flexible that parenting behavior is.

Father “involvement,” including engagement, accessibility, and responsibility, is a contemporary watchword in human parenting science (Cabrera & Tamis-LeMonda, 2013; Pleck, 2010), and as a burgeoning research literature is beginning to reveal fathers contribute in multiple, often unique ways to their children’s development. Mothers may serve as children’s primary caregivers and principal socializers (Greenfield, Suzuki, & Rothstein-Fisch, 2006), but fathers support autonomy development in children and, compared to mothers, encourage competitiveness, independence, and risk taking (Cabrera et al., 2000). Where researchers once contrasted absent with present fathers, or quantified father involvement in terms of financial contributions or sheer time spent with children, investigators today have moved beyond binary and unidimensional measures to better articulate the many parts children’s fathers play as well as their effects. For example, diets of fathers-to-be may affect the health of their future children (Lambrot et al., 2013); father involvement is associated with more optimal socioemotional and academic functioning and decreased behavior problems in childhood (Aldous & Mulligan, 2002; Flouri, 2010; Howard, Burke Lefever, Borkowski, & Whitman, 2006) and better mental health, occupational success, and educational attainment in adulthood (Brown, McBride, Shin, & Bost, 2007); and fathers’ positive engagements in low socioeconomic status (SES) families buffer developmental delay in children (Shannon, Tamis-LeMonda, London, & Cabrera, 2002).

Thus, fathers are neither inept nor uninterested in their offspring. Therefore, mother-father differences in parental roles and responsibilities cannot be attributed to a general inability of males to care for children. Fathers hold the same diversity of parenting cognitions that mothers do and engage children in the same wide range of parenting practices (Parke, 2002; Pleck, 2012). When feeding children, fathers, like mothers, respond to children’s cues, either with social bids or by adjusting the pace of the feeding (Parke, 2002). Both father and mother touch and look more closely at a child after the child has vocalized, and both equally increase their rates of speech following a child’s

vocalizing. Nor can gendered differences in parenting be attributed to father absence (because fathers tend to be away hunting or working outside of the home): When both parents are present, for example, U.S. American mothers spontaneously engage their children and provide routine care more frequently than do fathers (Belsky, Gilstrap, & Rovine, 1984). Moreover, fathers’ contributions to child development are independent from those of mothers. Fathers’ and mothers’ supportive parenting separately predict children’s language and cognitive status (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004), for example. In addition, in accounting for contrasting mother-father emphases, some have pointed out that fathers are occupied with key external family concerns, such as planning, monitoring, and garnering finances that constitute essential but indirect caregiving (Palkovitz, 2002). In the end, father presence is critical, as father absence has broad deleterious effects on children’s well-being (King & Sobolewski, 2006; Manning, Stewart, & Smock, 2003). Even children in joint physical or legal custody fare better than those in sole parent custody (Bauserman, 2002). Thus, research now consistently points to benefits for children of father involvement (Gray & Anderson, 2010; Raeburn, 2014; Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008).

With science catching up to life and shedding light on fathers, it is dismaying in the extreme to note that, according to the U.S. Census Bureau, 24 million children in America—one out of three—live in biological father-absent homes (U.S. Census Bureau, 2011). Being reared by a single mother increases the risk of many adverse life circumstances, such as teen pregnancy and marrying with less than a high school degree (Teachman, 2004). Even after controlling for income, youth in father-absent households have higher odds of incarceration than those in dual mother-father families (Harper & McLanahan, 2004).

### Coparenting and the Division of Parenting Labor

In point of fact, children’s mothers and fathers appear to interact with and care for them in many complementary ways; that is, parents tend to divide the full labor of caregiving and engage children by emphasizing different responsibilities and interactions. For example, mothers spend proportionally more time in routine care of children; fathers spend proportionally more time in teaching and play (Craig, 2006; Guryan et al., 2008; Ho, Chen, Tran, & Ko, 2010; Pleck, 2012). Mothers’ and fathers’ perceptions of their parental efficacy vary in complementary ways

as well: Mothers of young children are more confident than fathers in their ability to use strategies that involve reasoning or talking to the child; in contrast, fathers are more confident than mothers in their use of directives or the threat of force (Perozynski & Kramer, 1999).

Reflecting a family systems perspective, marital relationships affect the quality of child-mother and child-father affiliations and child outcomes (Grych, 2002), just as how parents work together as a coparenting team can have multiple far-reaching consequences for children's development (Teubert & Pinquart, 2010). Coparenting refers to ways that parents (or parental figures) relate to each other in the role of parent (McHale et al., 2002; McHale & Lindahl, 2011; Van Egeren & Hawkins, 2004). Coparenting comprises multiple interrelated components: agreement on child-rearing issues; support of the parental role; and joint management of family interactions (Feinberg, 2003). Mutual emotional support and validation, modeling and sharing parenting skills, and buffering marital conflict or dissatisfaction from spilling over into relationships with children constitute some of the ways coparenting functions to nurture children's development. Direct effects of coparenting postulate that exposure to interparental conflict, for example, undermines children's physiology, cognitions, and emotional security (Crockenberg & Langrock, 2001; Cummings & Davies, 2011; El-Sheikh & Hinnant, 2011), colors their peer relationships (Crockenberg & Langrock, 2001), and even reverberates in children's romantic relationships as young adults (Bornstein, Jager, & Steinberg, 2012; Cui & Fincham, 2010; Ladd & Pettit, 2002) and does so similarly in different ethnic groups (Stutzman et al., 2011). Perhaps this is why parents hide the vast majority of marital conflict from their children (Papp, Cummings, & Goeke-Morey, 2002). Indirect effects suppose that the impact of a parent on a child is mediated by the nature and structure of the parent-parent relationship per se (Grych & Fincham, 2001); infants just one year of age are less likely to look to their maritally dissatisfied father for information or clarification in the face of stress or ambiguity than are infants of maritally satisfied fathers (Parke, 2002). A prime example of indirect effects is gatekeeping—how each parent regulates the other's interactions with the child (Cummings, Merrilees, & George, 2010; Fagan & Barnett, 2003; Rane & McBride, 2000). In certain circumstances, fathers may be more involved with their children, as when mothers are more satisfied with paternal caregiving and assess fathers to be more competent at caring; many (but not all) paternal influences on children are indirectly mediated through the father's impact on

the mother (Walker & McGraw, 2000). Thus, maternal encouragement is linked to enhancing father involvement in child rearing ("gate opening"; Schoppe-Sullivan, Brown, Cannon, Mangelsdorf, & Sokolowski, 2008), and maternal discouragement with diminished father involvement in child rearing ("gate closing"; Meteyer & Perry-Jenkins, 2010; Trinder, 2008).

If children's parents divide the labor of caregiving, the question arises of how the content, meaning, and effects of father-child interactions resemble or differ from mother-child interactions. Some researchers have argued that one or the other parent's acceptance, for example, is more predictive of child functioning (E. Chen, Matthews, & Boyce, 2002; Khaleque & Rohner, 2012; Khan, Haynes, Armstrong, & Rohner, 2010; Veneziano, 2003). Others have reckoned that mothers and fathers make independent contributions to children's development. Ryan, Martin, and Brooks-Gunn (2006) and A. Martin, Ryan, and Brooks-Gunn (2007) video-recorded mothers and fathers during separate free-play interactions with their 2-year-olds and used cluster analysis to describe each parent's pattern of supportive parenting based on six scales. After parents were distributed into four primary support pairings, children were compared on the Bayley MDI and later Age-5 math and language. Not unexpectedly, children with two supportive parents scored highest, and those with two unsupportive parents scored lowest. However, having at least one supportive mother or father benefited children's cognitive development over having none, and among children with one supportive parent the gender of that parent was inconsequential. Thus, no significant interactions emerged between maternal and paternal supportiveness on children's math or language, and the combined effects of maternal and paternal supportiveness appear to be additive. Notably, mothers and fathers exhibited similar within-family supportive patterns. These kinds of findings evidence why future studies of parenting and child development should consider mothers, fathers, and the two in concert (see also Tamis-LeMonda et al., 2004).

### Children's Other Caregivers

Cooperatively breeding vertebrates (like human beings) often enlist helpers to take care of immature offspring within the social group that are not their own—activity termed "alloparental care" (Hrdy, 2009). In nonhuman mammals, such care typically encompasses pup feeding, babysitting, and carrying; 88% of 63 species that live in family groups employ alloparental care (Emlen, 1995). Most children



in the United States grow up with siblings (Kreider & Ellis, 2011), and siblings sometimes care for one another (Zukow-Goldring, 2002); grandparents often assume central roles in child caregiving (Ganong et al., Chapter 4, this *Handbook*, this volume; Smith & Drew, 2002); and increasing numbers of young children normatively participate in nonparental care (Clarke-Stewart & Allhusen, 2002). Consider the second two scenarios, caregiving grandparents and young children in nonparental care.

The position of grandparents in the British class system has a direct effect on which class their grandchildren belong, even after the parents' education, income, and wealth are taken into account (Chan & Boliver, 2013). In recent times, increased life expectancy, decreased family size, more maternal employment, the rise of single-parent families, and high rates of divorce have conspired to raise the demand for grandparents to play more central parts in the lives of their grandchildren (Arber & Timonen, 2012; de Toledo & Brown, 2013; Dunifon, 2012; Kornhaber, 2002; Witkin, 2012). In 2011, 1 in 10 children in the United States were living with a grandparent, and approximately one-half of those 7.7 million children were being cared for primarily by that grandparent (Livingston, 2013; Murphey, Cooper, & Moore, 2012). In some societies, grandparenting has become the norm: According to the Municipal Population and Family Planning Commission (2008), 90% of young children in Shanghai, China, are being looked after by a grandparent. Grandparental help may be indirect or direct: Grandparents can provide emotional and financial support, wisdom and love, and positive influences of stability and a sense of community that benefit children. Grandparents are pressed into (even sole) custodial service as the result of family/cultural preference, but grandparent-child relationships can be stressed if they require major family adjustments or result from crises of parental incarceration, substance abuse, migration, death, disability, abuse, or neglect (Lou & Chi, 2012; Poehlmann et al., 2008; Stelle, Fruhauf, Orel, & Landry-Meyer, 2010).

Many tasks associated with childcare can be traded or purchased in the marketplace. Today, children enter nonparental care early, stay for longer periods of time, and change types of care often (Burchinal et al., Chapter 6, this *Handbook*, this volume). Beginning in the child's first year, about 50% of the children in the United States, for example, experience regular nonparental child care, and by the preschool years more than 75% of children have lived through some type of childcare. As a consequence of contemporary social and cultural forces (mentioned above), reliance on child care services has burgeoned, parents are forced to resort to all manner of circumstances and

individuals for assistance, and nonparental caregivers are entrusted with increasing responsibility for meeting children's developmental needs and preparing children for their future in society (Gottfried, Gottfried, & Bathurst, 2002; Powell, 2008). Looming issues for all parties (children, parents, child care educators, researchers, and policymakers) are how parents reconcile contrasting patterns of child care cognitions and practices with these significant others and the long-term cumulative impact of grandparental and nonparental child care on children and parents alike (Dodge & Haskins, Chapter 17, this *Handbook*, this volume).

### Summary

Children's mothers and fathers share central parenting responsibilities, although siblings, grandparents, and various nonparental figures also fill salient childcare roles. Often, child caregivers behave in a complementary fashion to one another, dividing the labor of childrearing by emphasizing mutually reinforcing responsibilities and activities. Still unclear, however, are the long-term cumulative implications of diverse compositions of parenting. To fathom the complex associations that exist between parenting and child outcomes, it will be essential to study each child caregiver in the context of the full network of relationships that have both direct and indirect influences on children.

### PARENTING COGNITIONS AND PRACTICES

Now that the principal actors in parenting have been identified, it is fitting to consider how parenting is expressed. What defines parenting operationally? What about parenting might affect children? Parenting is instantiated in cognitions and practices. In their bioecological theory, Bronfenbrenner and Morris (2006) hypothesized that human development is the joint product of process, person, context, and time. In this formulation, *process* refers to dynamic interactions that the developing person experiences, and "proximal processes"—the person's social interactions with others and engagement in particular activities with particular materials—are hypothesized as particularly significant to children's development. Parenting instantiates proximal processes for children, and parenting is multidimensional, modular, and specific (Bornstein, 2002a, 2006), underscoring identification and empirical focus on individual cognitions and practices. Foreshadowing the discussion of these twin realms of parenting and their effects, it is important to recognize that the two are linked and that they separately and jointly affect children's development.



## Parenting Cognitions

Parenting cognitions have long held a popular place in the study of parenting and child development, and they span a wide array of mentations about parenthood, about one's own parenting, about childhood, and about one's own child(ren). Consider examples in each of these four domains. First, researchers have adopted innumerable measures designed to assess adults' thinking about parenthood generally. For example, Winstanley and Gattis (2013) developed a Baby Care Questionnaire to measure parents' endorsement of structure (reliance on regularity and routines in daily life) and attunement (reliance on infant cues and close physical contact in daily parenting practices). Likewise, Budd et al. (2012) investigated cognitions about acceptable versus unacceptable parenting practices. Second, how parents see their parenting is consequential as it can lead to their expressing one or another kind of affect, thinking, or behavior in childrearing. According to the Civitas Initiative et al. (2000) survey, 90% of new parents in the United States have confidence in their abilities and think of themselves generally as good parents. Mothers who consider themselves efficacious and competent in their parental role tend to be more responsive and empathic and less punitive and hold more appropriate developmental expectations (Meunier, Roskam, & Browne, 2011; De Haan, Prinzie, & Deković, 2009). Third, how parents generally construe childhood influences their parenting: Parents who believe that they can or cannot affect characteristics in children likely act accordingly. One-quarter of parents in the United States think that a baby is born with a certain level of intelligence that cannot be increased or decreased by how parents interact with the baby (Civitas Initiative et al., 2000). Such a statistic incites some wonder about investment in children's parenting in that 25% of the population. Last, how parents see their own children has specific consequences. Mothers who regard their child as being difficult, for example, are less likely to pay attention or respond to their child's overtures; their inattentiveness and nonresponsiveness can then foster temperamental difficulties and undermine cognitive advances in a child (Putnam, Sanson, & Rothbart, 2002). Parental "reflective functioning" represents the capacity to think about parent's own and a child's mental states and how mental states may influence behavior. Mothers with greater interest and curiosity in their child's mental states persist longer in soothing a crying life-like baby simulator (Rutherford, Goldberg, Luyten, Bridgett, & Mayes, 2013). In all these ways, parents' cognitions shape their transactions with children. Indeed, mothers and fathers develop some

stable parenting cognitions during pregnancy or before (Gloger-Tippelt, 1983; Zeanah, Keener, Stewart, & Anders, 1985) that reverberate going forward. In this connection, it is therefore well to recall the words of a prominent social psychologist that, "beliefs are like possessions" (Abelson, 1986, p. 223), and children's parents cling to their parenting cognitions and their children equally dearly.

Parenting cognitions prominently include goals, attitudes, expectations, perceptions, attributions, and actual knowledge of child rearing and child development (Goodnow, 2002; Holden & Buck, 2002; Sigel & McGillicuddy-De Lisi, 2002). Furthermore, cognitions are generally believed to serve many functions. They affect parents' sense of self, help to organize parenting, and mediate the effectiveness of parenting. Cognitions contribute to how to parent and how much time, effort, and energy to expend in parenting, and they form a framework in which parents perceive and interpret their children's behaviors. A brief exploratory taxonomy of these prominent parenting cognitions follows.

Some of parents' *goals* for their own parenting and for their children may be universal; after all parents everywhere presumably want physical health, academic achievement, social adjustment, and economic security for their children (however those goals are instantiated in a culture). In one study, African American, Dominican immigrant, and Mexican immigrant mothers in the United States reported the qualities they deemed desirable or undesirable in children aged 1, 14, and 24 months. Mothers spontaneously referred to a common set of qualities, including achievement, self-maximization, proper demeanor, and connectedness; most mothers approved of desirable qualities like achievement and disapproved of undesirable qualities like improper demeanor (Ng, Tamis-LeMonda, Godfrey, Hunter, & Yoshikawa, 2012). Other goals arise, in part, out of societies' unique expectations of their adult members. For example, some (often Western) societies are thought to stress independence, self-reliance, and individual achievement in children, whereas other (often Asian and Latin) societies emphasize interdependence, cooperation, and collaboration (Oyserman, Coon, & Kemmelmeier, 2002), and these societal values are associated with parents' socialization goals and practices. In accord with these expressed goals, in real-time interactions U.S. mothers encourage their children to feed themselves as early as 8 months of age, whereas Latina mothers hold their children close on their lap and control feeding from start to finish (Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002). On this construal, parents' socialization

goals are additionally important to the transmission of culture across generations.

*Attitudes* refer to an individual's predispositions, reactions to, or affective evaluations of the supposed facts about an object or situation. Some children are relatively relaxed when confronted with a novel environment and show little distress. Other children react to new situations with anxiety, try to remain close to a caregiver, and do not easily interact with unfamiliar people. This pattern indicates behavioral inhibition. Inhibited children can be found in China as well as Canada, but parents' attitudes toward this behavioral constellation differ in the two societies with consequences for children's further development. Traditional Chinese mothers view behavioral inhibition as a positive trait and express warm and accepting attitudes toward it, whereas Canadian mothers of European origin hold opposite attitudes, in which children's behavioral inhibition is negatively associated with maternal acceptance and encouragement of children's achievement. Traditional Chinese mothers of inhibited children are less likely to believe that physical punishment is the best way to discipline and are less likely to feel angry toward their child. However, maternal punishment orientation is positively correlated with behavioral inhibition in Canadian families; Canadian mothers of inhibited children are more likely to believe that physical punishment is a correct discipline strategy. In school, shy Chinese children fare better academically and are rated more positively by their teachers and peers in contrast to shy Canadian children who fare worse (X. Chen & French, 2008). In short, the same demonstration of behavioral inhibition in children is associated with positive attitudes in one context and negative attitudes in another, and situation dictates different consequences.

*Expectations* about a child as well as developmental norms and milestones—when a child should achieve a particular skill—affect parents' appraisals of their child, their parenting, and their child's development. Expectations also generally bias observations so that information consistent with the expectancy is more likely to be attended to, processed, and acted on. Expectations have formed a notable (and provocative) subject of pregnancy studies. Siddiqui & Hägglöf (2000) found that mothers' antenatal attachment expectations of their unborn child predicted their sensitivity and infant attentive behavior at 3 months postpartum (see also Thun-Hohenstein, Wienerroither, Schreuer, Seim, & Wienerroither, 2008). Using an equivalent longitudinal design, Dayton, Levendosky, Davidson, and Bogat (2010) learned that mothers who professed affectively disengaged prenatal representations of their

children were at 1 year more behaviorally controlling; mothers whose representations were affectively distorted were hostile; and mothers with balanced representations demonstrated more positive parenting. Similarly, Haltigan et al. (2014) determined that mothers' attachment representations assessed prenatally predicted observed maternal sensitivity at 6 months postnatally. More typical are studies of parents' expectations of their children after parturition. For example, mothers with more education generally expect children to attain developmental milestones earlier than those with less education (Williams, Williams, Lopez, & Tayko, 2000).

Especially salient *self-perceptions* of children's parents have to do with parents' feelings of competence in the role of caregiver, satisfaction gained from caregiving, investment in caregiving, and balance of caregiving with other social roles. Most is known about parenting competence (Bornstein, Hendricks, et al., 2003). Self-efficacy theory posits that adults who evaluate themselves as competent, who know what they can do, and who understand the likely effects of their actions will, as parents, more likely act as constructive partners in their children's development (Bandura, 1989). Parents' confidence in their ability to influence their children's academic performance and school achievement is associated with parents' school involvement and predicts parents' helping with children's academic interests (Epstein & Sanders, 2002). Parenting satisfaction affords a sense of well-being in the parenting role that translates to positive emotionally available parent-child interactions (Bornstein, Putnick, & Suwalsky, 2012). Investment in, involvement with, and commitment to children is foundational to positive childrearing; indeed, Baumrind and Thompson (2002, p. 3) defined ethical parenting "above all [as] requiring of parents enduring investment and commitment throughout their children's long period of dependency." High-investment parents are more responsive and view their children more positively (Greenberger & Goldberg, 1989). In turn, parental investment in children's lives and parental responsibility for children's care help to ensure that children receive the proper nutrition, physical activity, and medical care they require for wholesome development (Cox & Harter, 2003). How individuals balance their multiple roles in life—parent, spouse, and employee—reflects on their effectiveness in those diverse roles (Perry-Jenkins, Repetti, & Crouter, 2000). People who maintain greater balance score higher on measures of self-esteem and other indicators of well-being and lower on measures of role strain and depression (Marks & MacDermid, 1996). Mothers' role balance has more

impact on child development than mothers' work status per se, and mothers who are happy with their roles are more accepting of their children (Repetti & Wang, 2014).

*Attributions* are interpretations of causations of events and behaviors; parenting attributions refer to assigned meanings and definitions of a child's behavior and so can shape parents' caregiving practices, and in turn affect children's lives (Bugental & Happaney, 2002). Parental attributions typically distinguish between internal or intentional and external or situational. An internal attribution might refer to parental interpretations of a child's behavior as dispositional and deliberate, whereas an external attribution might refer to parental interpretations of a child's behavior as contextual, transitory, and even accidental (Coplan, Hastings, Lagacé-Séguin, & Moulton, 2002). In certain circumstances, parents might believe their children are behaving purposefully in one or another way when their children's behavior may be, in fact, developmentally typical. For example, higher levels of internal attributions of child misbehaviors are more prevalent among neglectful and abusive mothers and among authoritarian mothers (Wang, Deater-Deckard, & Bell, 2013). Parenting attributions vary with culture (see the introduction to the special issue of *Parenting* by Lansford & Bornstein, 2011), and research has documented that parents' differential attributions about the relative contributions of effort and ability are key ingredients to parents' successful parenting as well as to children's development (Bornstein et al., 1992). For example, mothers from Argentina, Belgium, Italy, Israel, Japan, and the United States were asked if being able to successfully comfort their child when the child cried was due to their parenting ability (e.g., "I am good at this"), effort (e.g., "I have tried hard"), mood (e.g., "I am in a good mood"), task difficulty (e.g., "This is easy to do"), or a child characteristic (e.g., "My child makes this easy to do"). Many culturally differentiated patterns of findings emerged; for instance, Japanese mothers were less likely than mothers from all other nations to attribute parenting success to their own ability and more likely to indicate that, when they were successful, it was because of the child's behavior.

Whereas goals, attitudes, and other like cognitions may or may not be factual, parenting *knowledge* draws on the science base as well as social construction and is thought to be valid and reliable by members of the clinical and research communities. Parenting knowledge of child rearing and child development encompasses many domains: parents' opinions about various approaches appropriate to fulfilling the biological and physical as well as socioemotional and cognitive needs of children as they develop;

parents' understanding of normative child development, including both developmental processes and the abilities and accomplishments of children as they grow; and parents' awareness of health care, identification and treatment of illnesses, and accident prevention. Parenting knowledge equips parents with information needed to interpret children's abilities and accomplishments and to tailor their interactions accordingly. In turn, parenting knowledge is associated with enhanced parental self-perceptions of competence, satisfaction, and investment in parenting (Bornstein, Hendricks, et al., 2003). The relation between parental self-efficacy and parenting competence is also moderated by parenting knowledge: Parental self-efficacy and parenting competence are positively associated when parenting knowledge is high; by contrast, self-efficacy and competence are inversely associated when knowledge is low (Hess, Teti, & Hussey-Gardner, 2004). The general state of knowledge that parents possess about children's development therefore affects parents' everyday decisions about their children's care and upbringing. For example, sudden infant death syndrome (SIDS) is the leading cause of reported neonatal mortality in the United States (Centers for Disease Control and Prevention, 2014b), and sleeping prone or on too-soft bedding that may cover an infant's mouth and nose increases the likelihood of asphyxiation (Scheers, Rutherford, & Kemp, 2003). Still, approximately 20% of infants, ages 1 to 3 months, are placed to sleep on their stomachs (Gibson, Dembofsky, Rubin, & Greenspan, 2000). Proper parenting practices follow knowledge of principles related to early experience, bidirectionality of social influences, individual differences, and the responsibilities of being a parent. In a famous dictum, the pediatrician Benjamin Spock wrote: "Trust yourself. . . . You know more than you think you do" (Spock, 1946, p. 3). On the whole, however, European American mothers demonstrate a fair, but less than complete, basic knowledge of parenting, and mothers' age, education, and written materials each uniquely contributes to their knowledge (Bornstein, Cote, Haynes, Hahn, & Park, 2010).

### Parenting Practices

Parents' practices give expression to parenting cognitions and constitute a large measure of children's worldly experience. They also span a range as expansive and varied as life has to offer: Parenting is an emotional endeavor that entails a mix of pride, patience, sacrifice, and humility (Pomerantz, Wang, & Ng, 2005), and parenting is responsibility and accountability (for example, parents in the United

States have set aside more than \$190 billion just toward their children's future college education; College Savings Plans Network, 2013). Parenting behaviors and children's development are linked (Belsky, Fearon, & Bell, 2007; Bernier, Carlson, & Whipple, 2010; Chang, Schwartz, Dodge, & McBride-Chang, 2003; Gaertner, Spinrad, & Eisenberg, 2008).

Despite the wide range of activities parents naturally engage in with children, classical authorities, including psychoanalysts, personality theorists, ethologists, and attachment theorists, historically tended to conceptualize maternal behavior as trait-like and unidimensional, often denoted as "good," "good enough," "sensitive," "warm," or "adequate" (Ainsworth et al., 1978; Brody, 1956; Brody & Axelrad, 1978; Mahler, Pine, & Bergman, 1975; Rothbaum, 1986; Schaefer, 1959; Symonds, 1939; Winnicott, 1973). One leading system that adapted this dimensional perspective cast parenting in terms of combinations of two prominent independent dimensions, warmth and control. Warmth connotes parents' acceptance, displays of affection, sensitivity, expressiveness, support, and involvement (Pomerantz & Thompson, 2008; Rohner, Khaleque, & Cournoyer, 2005); control ranges from supervision, monitoring, and maturity demands to demandingness, power assertion, and harsh discipline (Berger, 2011; Kochanska, Aksan, Prisco, & Adams, 2008; Racz & McMahon, 2011; Stormshak, Bierman, McMahon, & Lengua, 2000).

Parental warmth and control, especially in their extremes, have both positive and negative expressions and consequences. There is positive parental control or limit setting, which is associated with higher levels of child competence and lower levels of child disruptive behavior (Gardner, Shaw, Dishion, Burton, & Supplee, 2007; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; Koblinsky, Kuvalanka, & Randolph, 2006; Pettit, Keiley, Laird, Bates, & Dodge, 2007), but also negative control or rejection, which is identified with children's internalizing and externalizing (Chang et al., 2003; Deater-Deckard, Ivy, & Petrill, 2006; Ispa et al., 2004; Rodriguez, 2003; Stormshak et al., 2000; Veneziano, 2003); there is warmth and involvement, which are associated with social competence, prosocial behavior, and academic achievement (Chung, Zappulla, & Kaspar, 2008; Fingerman et al., 2012; Gülay, 2011; Ip, Cheung, & McBride-Cheng, 2008; Kim, Han, & McCubbin, 2007; Segrin, Woszidlo, Givertz, Bauer, & Murphy, 2012; Yagmurlu & Sanson, 2009), but also "helicopter parenting" (oversolicitousness) and "parenting perfectionism" (excessively high standards),

which appear to instill feeling unsatisfied with family life and diminished psychological well-being (Lee, Schoppe-Sullivan, & Kamp Dush, 2012; LeMoyne & Buchanan, 2011; Pomerantz, Moorman, & Litwack, 2007; Schiffrin et al., 2013; Snell, Overbey, & Brewer, 2005). Hypo-responsiveness and -stimulation in parenting predict insecure attachment, aggressive and disruptive behavior, and acting out in children; likewise, hyper-responsiveness and -stimulation can impede development and are associated with decreased attentiveness and increased negative affect. When all is said and done, it may be the case that a middle course ("less is more") is optimal in parenting (Bornstein & Manian, 2013), a deduction gaining support in neurobiology (LeDoux, 2002; Mascaro, Hackett, Gouzoules, Lori, & Rilling, 2013).

Baumrind's (1967, 1978, 1991) well-known styles of parenting—authoritative, authoritarian, permissive, and disengaged—combine the two dimensions of warmth and control in different weights (Kuppens, Grietens, Onghena, & Michiels, 2009; Maccoby & Martin, 1983). These parenting styles are hypothesized to contribute differentially to children's identity formation and cognitive and sociomoral development. The authoritative style joins high levels of warmth with moderate to high levels of control and the use of negotiations (Larzelere, Morris, & Harriet, 2013), and in middle-class European American families authoritative parenting is associated with children's achievement of social competence and overall better adaptation (DeVore & Ginsburg, 2005; Jaffe, Gullone, & Hughes, 2010). Authoritarian parenting, by contrast, is characterized by low levels of warmth, high levels of control, and avoiding negotiations, and it is generally associated with internalizing, externalizing, and social problems in middle-class European American children (Barber & Harmon, 2002; Cunningham & Boyle, 2002; Gülay, 2011; Zhou et al., 2002). However, other research has revealed that different outcome patterns obtain in different social classes and ethnic groups. For example, adolescents from European American and Latin American authoritative homes perform well academically, and better than those coming from nonauthoritative households; however, school performance is similar for authoritatively and for nonauthoritatively reared Asian Americans and African Americans (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987).

One aspect of authoritative parenting is parental warmth. So-called PARTheory asserts that all children need warmth, affection, love, and regard from their primary caregivers and describes a continuum of parenting acceptance-rejection (Rohner, 2004; Rohner et al., 2005;



Prinz, Stams, Deković, Reijntjes, & Belsky, 2009). Although PARTheory was developed in a Western (U.S.) setting, meta-analyses and reviews of cross-cultural and intracultural studies generally (but not universally) support the broader applicability of its basic propositions (Rohner & Britner, 2002). In each of nine countries Bradford et al. (2003) unearthed relations between parental acceptance and lower levels of depression in adolescents. Gülay (2011) found that mother and father reports of acceptance-rejection are related to teacher-rated child prosocial behaviors in Turkey, as Carlo, Mestre, Samper, Tur, and Armenta (2010) discovered in Spain, and Yagmurlu and Sanson (2009) in Australia. On the basis of meta-analysis, 26% of the variance in child adjustment (a composite measure of 14 aspects of child functioning) can be explained by parental acceptance-rejection (Khaleque & Rohner, 2002). Children who perceive rejection from their parents tend to become hostile, emotionally unstable, and develop negative self-esteem and a pessimistic worldview (Hughes, Blom, Rohner, & Britner, 2005).

Since their initial formulation, warmth and control have undergone considerable scrutiny, articulation, and question with respect to construct operationalization as well as parent, child, and culture moderation. Take protectiveness as an expression of warmth. The developmental literature historically treated protectiveness as a unidimensional construct (Parker, 1983; Sargent, 1983). Besides trying to protect their children from physical harm, however, parents engage in diverse behaviors to protect their children from psychological and social harm (Power, 2004). Parent protectiveness has proved to be better conceptualized as multidimensional, and the effectiveness of parent protectiveness better explored with respect to its different dimensions and effects. Not unexpectedly, different kinds of protectiveness show different relations with different domains of child adjustment (Power & Hill, 2008). Which parent is involved is another moderating factor. Some studies report relations between maternal or combined maternal and paternal acceptance and child social competence (Ip et al., 2008; Kim et al. 2007), but others report no direct relations (S. M. Chan, 2011; Swanson, Valiente, Lemery-Chalfant, & O'Brien, 2011). Chung et al. (2008) found that greater perceived warmth from mothers and fathers is associated with higher teacher-rated academic achievement in children in Brazil, Canada, China, and Italy, and Kim and Rohner (2002) reported similar results for Korean American children. This finding is not a universal either, however (Bodovski & Youn, 2010; Boon, 2007; Swanson et al., 2011; Tulviste

& Rohner, 2010). A meta-analysis that distinguished maternal and paternal acceptance-rejection found that maternal acceptance-rejection explained 24%, and paternal acceptance-rejection explained 38%, of the variance in child adjustment (Khaleque & Rohner, 2012). It might be that paternal, but not maternal, warmth/acceptance is tied to child academic performance (Chen, Liu, & Li, 2000) or that one parent's acceptance is related to school performance in girls or in boys (Khan et al., 2010).

For its part, understanding the composition and dynamics of control is challenging contemporary researchers. For example, two types of control, behavioral and psychological, have been distinguished (Barber, Stoltz, & Olsen, 2005). Psychological control, characterized by high power assertion, intrusiveness, and hostility, is associated with love withdrawal, manipulation, invalidation of feelings, and ineffective behavioral management, and appears to provoke internalizing, externalizing, and social problems (negative self-concept and low self-esteem) in children (Aunola & Nurmi, 2005; Barber & Xia, 2013; Bean, Bush, McKenry, & Wilson, 2003; Cunningham & Boyle, 2002; El-Sheikh, Hinnant, Kelly, & Erath, 2010; Kunz & Grych, 2013; Silk, Morris, Kanaya, & Steinberg, 2003; Wijsbroek, Hale, Raaijmakers, & Meeus, 2011). Meta-analysis of the literature has revealed relations among parenting psychological control, negative support (rejection, hostility, and neglect), and inconsistent discipline with adolescent delinquency (Hoeve et al., 2009). It contrasts in association and effects with control characterized by reasoning, reminding of rules, and explaining (Paulussen-Hoogbeem, Stams, Hermanns, & Peetsma, 2007). The pathway(s) by which control exerts effects demand attention and clarification from research. It could be that parents who resort to psychological control fail to regulate their behavioral choices and therefore model problem behavior for their children; it could be that they do not command more optimal socialization strategies; it could be that they establish an emotional climate of invalidation and pressure within the family that permeates development (Barber & Xia, 2013; Snyder et al., 2013).

Behavioral control is usually intended to discourage antisocial behavior and promote prosocial behavior (Bjorknes, Kjøbli, Manger, & Jakobsen, 2012). Apparently, the vast majority of parents (in China 98% and the United States 84%, for example) outright lie to their children to get them to behave (Heyman, Hsu, Fu, & Lee, 2013). In disciplining children, parents too often escalate to corporal punishment. For example, 77% of U.S. American men and 65% of women endorse the statement that sometimes a



child needs a “good, hard spanking” (Child Trends, 2009), and almost 50% indicate that they had spanked their 2- to 5-year-old child in the past month (MacKenzie, Nicklas, Brooks-Gunn, & Waldfogel, 2011). Sanction of corporal punishment is widespread worldwide: A study of 30,470 families with 2- to 4-year-olds in 24 developing countries revealed that 29% of parents endorsed the belief that using corporal punishment is necessary to rear a child properly and that 63% reported that their child had been corporally punished in the last month (Lansford & Deater-Deckard, 2012). However, meta-analysis of the extant literature indicates that the only desirable outcome associated with corporal punishment is immediate compliance with a parent’s request and that many other short- and long-term negative outcomes (low child moral internalization, aggression, and delinquent behavior; adult aggression, antisocial, and criminal behavior) attend parental resort to corporal punishment (Gershoff, 2002). Punishment in conjunction with reasoning is linked with lower levels of disruptive behavior, but is unrelated to prosocial behavior and may promote moral reasoning based on fear. By contrast, parental inductive reasoning is linked with a variety of positive outcomes in children including prosocial behavior, empathy, and sympathy (Eisenberg & Fabes, 1998). Whichever, the effectiveness of parental discipline that emphasizes communication and reasoning appears to depend on children accurately perceiving and construing their parents (Grusec & Goodnow, 1994).

Dimensional, trait, and person approaches (like those just recounted) are popular ways of conceptualizing parenting, but entail a debatable set of assumptions and implications about the nature of parenting. In the 1970s, Thomas and Chess (1977) observed that such formulations assume an all-or-nothing character and they argued that it is insufficient and inaccurate to characterize a parent in an overall diffuse way as adhering to one or another general style. This view supposes that parents package a great variety of beliefs and behaviors together into a monolithic set and display the self-same beliefs or behaviors across domains of interaction, time, and context. Operationally, that is, a parent who engages the child in more emotional and interpersonal exchanges is also the parent who engages the child in more teaching and learning experiences and does so in all situations. Trait conceptualizations project parenting as more or less fixed in recurrent patterns, so that the particular pattern embodied by a parent represents the essence of that parent’s childrearing. Moreover, the trait approach to parenting does not invite more differentiated developmental questions or allow for bidirectionality,

the fact that different child characteristics may affect or evoke particular factors of parenting. Yet, child effects acknowledge the many and diverse behavioral adjustments parents make to children’s age and gender, appearance and behavior, temperament and intelligence (see later in this chapter on determinants). Alternatively, childrearing reflects multiple interactions of parent, child, and context, and parents naturally engage their children in a range of diverse activities and do not only or necessarily behave in uniform ways. Rather than employing a broad style, parents flexibly change in parenting as children age, vary their approach with children of different temperaments, and differ in response to situational constraints such as whether they are in public or in private. Like personality, parenting may be a social construction that judiciously combines personological consistency with situational specificity (Fleeson, 2004). Instead of broad styles, it may be helpful to explore more fine-grained parenting practices.

In *inhuman* primates the majority of maternal behaviors appears to consist of biologically requisite or obligatory feeding, grooming, and protection (Bard, 2002). Some related primate actions focus on assessing and monitoring brood behavioral state. Primate mothers also engage offspring in physical exercise and play and thereby encourage motor development. By contrast, the contents of human parent-child interactions are more dynamic and varied and include multiple obligatory as well as discretionary activities. Parents nurture and protect children, but they also guide children in understanding and expressing proper feelings and emotions, educate children in behaviors that are acceptable for the stage of childhood they occupy, and prepare children for adaptation to a wider range of life roles and contexts they will encounter as they grow (Bornstein, 2002a). Like cognitions, parenting practices are multidimensional, modular, and specific, and a number of domains of parenting practices has been identified as a common core of parental care (Bornstein, 2002a, 2006; for other componential taxonomies, see Bradley & Caldwell, 1995; E. Skinner, Johnson, & Snyder, 2005). They are nurturant, physical, social, didactic, verbal, and material forms of caregiving.

When parents *nurture*, they meet the biological, physical, and health requirements of their offspring. In an evolutionary perspective, survival to reproduction constitutes an ultimate criterion of adaptation. After reproduction, survival is achieved through provision of nourishment and protection of the child. Child mortality is a perennial parenting concern, and parents are centrally responsible for promoting children’s wellness and preventing their

illness. To do so, parents provide sustenance, protection, supervision, grooming (and the like) and shield offspring from risks and stressors. Adjusting for possible confounds, breastfeeding is associated with greater activations in select brain regions to a woman's own baby cry (P. Kim et al., 2011) and sensitive responsiveness and greater attachment security (Tharner et al., 2012) in mothers as well as higher language scores in children (Belfort et al., 2013).

Parents promote children's *physical* development, that is their gross and fine motor skills, and do so in many direct and indirect ways. Parents physically move and manipulate babies to reach or step, and they set goals and reward achievements. For example, Jamaican mothers expect their children to sit and to walk early, whereas Indian mothers living in the same city expect their children to crawl later. In each case, children's actual attainment of developmental milestones accords with their mothers' expectations (Hopkins & Westra, 1989, 1990). Super (1976) found advanced sitting, standing, and walking among Kenyan Kipsigis babies, but retarded head lifting, crawling, and turning over; more than 80% of Kipsigis mothers deliberately taught their infants to sit, stand, and walk. Indeed, the mothers who report "teaching" their babies to crawl have babies who crawl earlier in six African societies.

Parenting in the *social* domain includes a variety of visual, verbal, affective, and physical behaviors parents deploy in engaging children in warm interpersonal exchanges. Through positive feedback, openness and negotiation, listening, and emotional closeness, parents make their children feel valued, accepted, and approved of. Social caregiving also includes all the ways parents help and direct children to regulate their own affect and emotions and influence the communicative styles and interpersonal repertoires that children use to form meaningful and sustained relationships with others. Mothers' affectionately touching, rocking, holding, and smiling at their infants predict children's cognitive competencies (Olson, Bates, & Bayles, 1984).

Parenting includes a variety of *didactic* strategies used to stimulate children to engage and understand the wider natural and designed environments. Didactics organize the child's attention to properties, objects, or events in the surroundings; introduce, mediate, and interpret the external world; describe and demonstrate; as well as provoke or provide children with opportunities to observe, to imitate, and to learn. Education is a vital human parenting function and is foundational to children's proper embedding in their culture. Mothers who prompt more and respond more during their child's first year have preschoolers who score higher in

standardized evaluations of language and cognition (Bornstein, 1985; Nicely, Tamis-LeMonda, & Bornstein, 1999).

*Language* use in parenting is fundamental to child development and to the parent-child bond itself. The motivation to acquire language is social and born in interaction, usually with parents (Trevvarthen & Aitken, 2001). Rowe (2012) examined the quantity and quality of parent verbal input longitudinally to determine which aspects contribute most to children's vocabulary skill; controlling for social class, input quantity, and children's prior vocabulary skill, parents' using diverse and sophisticated vocabularies and narrative explained variation in child vocabulary (see also Song, Spier, & Tamis-LeMonda, 2013). Language also crosscuts the foregoing domains, as speech to children supports and enriches all domains of child development (Hoff, 2003): Labeling children's behavior is a common way to call attention to it and promote later recall. For example, Meins et al. (2002) described parents who treat their children as persons with thoughts and feelings as being "mind-minded;" the more mothers' language refers to and comments on their infants' minds, the more advanced children's theory of mind becomes.

Finally, caregiving includes those ways in which parents materially provision and organize the child's world, especially the home and local environments (Bradley, Chapter 12, this *Handbook*, this volume). Parents influence their children not only by what they do and the roles they play, but by the stimulation and opportunities they provide. Adults are responsible for the number, variety, and composition of inanimate objects (toys, books, tools) available to the child, the level of ambient stimulation, the situations and locales children find themselves in, the limits on their physical freedom, and the overall physical dimensions of children's experiences. Features of the parent-oufitted physical environment affect child development (Wachs & Chan, 1986): New toys and changing room decorations promote child language acquisition in and of themselves and independent of other parenting actions.

Certain characteristics of this parenting taxonomy merit brief comment: (a) nurturant and physical parenting seem obligatory; by contrast, social, didactic, language, and material parenting appear more discretionary; (b) nurturant, physical, social, didactic, and verbal parenting are active forms of interaction; physical and material parenting may be active or passive; (c) no one category of parenting is the most prominent all the time, although any one may dominate parent-child interaction at a given time; and (d) there is initially asymmetry in parent and child contributions to parenting practices in that responsibility

for nurturing, promoting physical growth, sociability, teaching, language, and material provisions in early child development appear to lie unambiguously with parents, but as time passes children play more active and anticipatory roles in their own development.

Together, the foregoing domains encompass virtually all of parents' important activities with their children and are perhaps culturally universal, even if their qualitative instantiations or quantitative emphases (in terms of sheer frequency or duration) vary. Although these modes of caregiving are conceptually and operationally distinct, in practice parent-child interaction is dynamic, intricate, and meshed, and parents regularly engage in combinations of them. When a parent gathers a child on his or her lap to read a picture book together, a lot is going on physically, intellectually, verbally, emotionally, and socially. These modes also have been studied for their variation, stability, continuity, and covariation as well as for their influences on child development. Taken as a totality, this constellation of parenting practices constitutes a varied and demanding task set, and (as with cognitions) adults differ considerably in terms of how they esteem components of the caregiving repertoire as well as in how successful they are in executing different components. For their part, human children are reared in, influenced by, and adapt to a social and physical ecology commonly characterized by this parenting taxonomy and its elements. Contra a person orientation, the componential construction is more faithful to a variable orientation to parenting.

### Some Principles of Parenting Cognitions and Practices

For parent cognitions and practices to be meaningful in child development they best meet several psychometric criteria. To be better understood, relations between cognitions and practices also need to be explicated, processes of their action explained, and myriad other considerations that apply to them addressed. Each of these principles is considered in turn.

*Psychometric characteristics.* Four significant psychometric characteristics help to define and distinguish parenting cognitions and practices. The first has to do with variation. Adults vary among themselves, within as well as across social groups, in terms of how tenaciously they cling to their parenting cognitions, how often and long they engage in parenting practices, and how they interpret and invest meaning in both. For example, the amounts of language which parents address to children vary enormously: Some mothers talk to their infants during as little

as 3% and some during as much as 97% of a naturalistic home observation, even when mothers are sampled from a relatively homogeneous population in terms of education and social class (Bornstein & Ruddy, 1984). This variation does not preclude startling systematic group differences in parenting, for example, by social class or ethnicity or culture. In a year, the child in a "professional" family hears 11 million words, whereas the child in a "welfare" family hears 3 million and by middle childhood spoken vocabularies of children of "professional" families exceed spoken vocabularies of parents of "welfare" families (Hart & Risley, 1995, 1999).

A second psychometric feature of parenting has to do with developmental stability and a third with continuity. The term *stability* means consistency in the relative ranks of individuals in a group over time, and *continuity* means consistency in the mean level of a group over time; the two are conceptually and statistically independent developmental constructs (M. Bornstein & Bornstein, 2008). Holden and Miller (1999) meta-analyzed consistency of attitude questionnaires and behavioral observations of parents (mostly mothers) and arrived at a relatively high median correlation of .59 (see also Dallaire & Weinraub, 2005; Haltigan, Roisman, & Fraley, 2013). Within-family parenting of first- and secondborns shows similar moderate consistency (Hallers-Haaloom et al., 2014) even if parental investment in daily interactions with children varies inversely with family size, regardless of family SES (Lawson & Mace, 2009). The fact that individual differences in parenting are stable (to some degree) implies that cognitions and practices assessed at one point can be assumed to reflect past as well as future parenting. It also means that indices of parenting might be related meaningfully to concurrent or future child behavior or performance.

Individual parents appear to maintain their standing relative to one another from day to day: Parents who talk to their children more on Monday likely talk to their children more on other days of the week. Over longer periods, of course, group mean levels in parenting change, and they certainly do so in response to children's development. Thus, stability does not negate age-appropriate continuity or discontinuity in parenting. For example, the ratio of adult-directed speech to child-directed speech increases across just the first postpartum year (Bornstein & Tamis-LeMonda, 1990). In infancy, dyadic attunement serves as a foundation for sensitive and warm communication and interpersonal interaction (Bornstein, 2013a); in childhood and adolescence, parents mediate and monitor their children's social relationships with others, such as peers (Bornstein, Jager, &

Steinberg, 2012; Ladd & Pettit, 2002; Racz & McMahon, 2011; Stattin, Kerr, & Tilton-Weaver, 2010). Keeping an eye on a toddler in the park when the child is beginning to walk and giving a cell phone to a teen who is beginning to drive a car appear superficially different but may be conceptually similar in the sense of reflecting continuity in parental monitoring. More generally, some domains of parenting wax while others wane as children develop, but parents adjust relative to both child age and child competence or performance.

A fourth characteristic of parenting concerns the covariation among parenting domains. Positions alternative to the person conceptualization of parenting are that caregiving cognitions and practices are not necessarily or rigidly linked psychologically, but that individual parents vary in patterning their beliefs and behaviors in ways that call into question any monistic or trait organization of parenting. In shorter words, parenting is multidimensional, modular, and specific, and individual parents may profess particular cognitions and emphasize particular practices with their children at different times, in different places, and so forth (Bornstein, 2002a, 2006).

*Cognition-practice relations.* Do parents' cognitions always animate their practices? Parents' cognitions are often hypothesized to prompt or direct parents' practices and, ultimately, children's development (Darling & Steinberg, 1993; Sigel & McGillicuddy-De Lisi, 2002). Importantly, relations between beliefs and behaviors are historically an unsettled area in social psychology (Festinger, 1964; LaPiere, 1934), and relations between parental beliefs and behaviors specifically have proved equally elusive (Coleman & Karraker, 2003; Cote & Bornstein, 2000; Okagaki & Bingham, 2005).

Those parenting beliefs and behaviors whose causal relation has been evaluated have been very general, giving little reason to expect covariation. When more circumscribed and conceptually corresponding domains are studied, some maternal childrearing beliefs have been found to relate to some self-reported or observed childrearing behaviors, supporting expected links in the putative causal chain, as for example between authoritarian attitudes and discipline strategies, intuitions about parenting effectiveness and caregiving competence, and the like (Coplan et al., 2002; Huang, O'Brien Caughy, Genevro, & Miller, 2005; Kinlaw, Kurtz-Costes, & Goldman-Fraser, 2001). Thus, the association between parents' cognitions and practices appears to depend, at least in part, on alignment of the contents of the beliefs and the behaviors in question. For example, Benasich and Brooks-Gunn (1996), using the

prospective longitudinal study data set of a low-birthweight preterm cohort from the multisite U.S. Infant Health and Development Program, found that maternal knowledge of child development and child rearing conditioned the quality and structure of the home environment mothers provided, which in turn affected child cognitive and behavioral outcomes. Fathers' perceptions of their investment in parenting relate to their actual levels of involvement (McBride et al., 2005).

Beliefs do not always map onto behaviors directly, but the two coexist in complex ways, and meaning assigned to each is critical (Bornstein, 1995). What may be called the "standard model" of cognition → practice → development relations is widely assumed but seldom confirmed *in toto*. Many associations between parents' cognitions and practices reflect shared source and method variance (much research in these associations has utilized parents' self-reports to measure the two or has measured the two at the same time), inflating their relations. All of these considerations have unsurprising practical implications as targets of parenting interventions (discussed later in this chapter; see Pinquart & Teubert, 2010). All also represent areas ripe for further research.

*Action processes.* Parenting is readily identified with socialization, but formal socialization is only one process by which children's parents influence their development. Other general psychodynamic, learning, cognitive, and opportunity processes have been identified (as hinted at in the earlier discussion of theory). These processes are thought to apply broadly as they are applicable to diverse contents and contexts across the life span.

Psychodynamic socialization, internalization, and attachment constitute one interrelated group of correlational mechanisms. Sigmund Freud (1949) speculated about the special importance of early experiences in socialization, suggesting that the ways parents treat their young progeny establish lifelong personality traits (Cohler & Paul, 2002). Freud and his followers posited *psychodynamic* mechanisms like introjection and internalization to account for developmental phenomena, such as gender socialization. Girls usually identify with mother and adopt female behaviors, boys with fathers and male behaviors. Children who work alongside their same-gender parents internalize roles and rules for appropriate gendered behavior and identities as members of their communities (Lancy & Grove, 2010). Bowlby (1969) and successive attachment theorists subsequently proposed that, arising out of their early interpersonal experiences with caregivers, young children develop "internal working models" of their



caregivers that incorporate both sides of the caregiver-child relationship. Attachment research assumes that, on the basis of repeated patterns of interaction, children develop enduring representations of socioemotional relationships (Fraley & Shaver, 2000; Mikulincer, Shaver, & Pereg, 2003). Moreover, predictive links have emerged between mothers' own attachment classification and her child's attachment (Miljkovitch, Pierrehumbert, Bretherton, & Halfon, 2004) and between impaired maternal-infant attachment and internalizing behavior in early childhood (Madigan, Atkinson, Lauren, & Benoit, 2013). Malberg and Mayes (2013) provide a contemporary treatment and amalgam of these two perspectives.

Classical, operant, and observational *learning* all refer to contingencies that govern the formation and encoding of information and are thought to constitute species-general rules. From the very beginning of life, human beings make associations and subsequently use what they have learned. Moreover, early simple behavior patterns are asserted to underlie later more complex behavior patterns. Although learning processes apply to many aspects of development, one example of a direct avenue of socialization is posited to flow through parents' differential treatment, which may assume various forms. One type operates through parenting cognitions; for example, parents possess different beliefs about (their) girls and boys across a wide array of domains. Mothers of toddlers underestimate their girls' motor skills and overestimate their boys' motor skills even when objective tests show no gender differences in children's motor performance (Mondschein, Adolph, & Tamis-LeMonda, 2000). Parents tend to expect boys to do better than girls in science and math (Eccles, Freedman-Doan, Frome, Jacobs, & Yoon, 2000; Tenenbaum & Leaper, 2003), again despite a lack of actual gender differences in performance (Hyde, Lindberg, Linn, Ellis, & Williams, 2008; Tenenbaum & Leaper, 2003). These messages are hypothesized to influence children's self-concepts, motivation, and choices. A second type of differential treatment occurs through parenting practices, parents' direct active or passive interactions with children. Mischel's (1970) social learning perspective called attention to parents' (and others') direct reinforcement of children's conformity to expected or desired norms, as with respect to gender when adults compliment a girl when she nurses a toy doll and a boy when he builds a model airplane. Girls are more likely to be involved in housework than boys (Huebler, 2008). Children's execution of different behaviors often depends on rewards or injunctions associated with their outcomes. Praise is a good example of reinforcement. Parents' praising of their

children's efforts at 18 to 38 months predicts children's attributing success to hard work and enjoying challenges at 7 to 8 years (Gunderson et al., 2013). Indeed, praise is known to operate as early as 4 to 9 months and in different cultures (Japanese) inflecting the trajectory of children's later social confidence (Shinohara et al., 2010).

Parents, too, offer children different models for *imitation*. In one view, children acquire new behaviors without ever performing them overtly and without ever being rewarded, but merely by observing behaviors being performed by parents (Bandura, 1989). To the extent that mothers, fathers, or other caregivers are important and influential figures in children's lives, often to be emulated or feared, they shape children's impressions of what it means to be a woman or a man, for example, simply by acting like a woman or a man (Bussey & Bandura, 1999). Imitation is a particularly efficient process for acquiring information just by watching or listening. Observation is also motivated by the expectation that, at a future time, the observer will be responsible for the action in question (Rogoff, 2003; Rogoff, Pardies, Arauz, Correa-Chavez, & Angelillo, 2003). Imitation may be hardwired and virtually automatic (Chartrand & Bargh, 1999; Molenberghs, Cunningham, & Mattingley, 2012; Rizzolatti & Fogassi, 2007).

As briefly mentioned earlier, in an *instruction* and *scaffolding* view, socialization is more an interactive, bidirectional process. Vygotsky (1978) saw the individual as actively engaged with his or her surroundings and emphasized the crucial importance of social interaction in socialization, contending that the more advanced partner (the socializer) influences (raises the level of performance) of the less advanced partner (the socializee) through their social-cognitive interactions. Wood, Bruner, and Ross (1976) identified the teaching roles adults adopt in interactions with children under the rubric of "scaffolds." As engineers would in constructing a building, caregivers sometimes employ temporary aids to support and guide a child's development. Scaffolding strategies vary depending on the nature and age of the child and the actual activity, and caregivers can vary in the scaffolds they favor. Mothers and fathers tend to scaffold children's learning differently, and they encourage girls' and boys' participation in different learning activities and household chores in anticipation of their expected later gender roles in adulthood (Coltrane, 2000; Leaper, 2002; Raley & Bianchi, 2006), just as children possess and reference stereotypic expectations about family activities (Schuette & Killen, 2009).

Another important route by which socialization proceeds is through the types of opportunities parents provide



or promote. Access to certain settings affords children chances to develop certain self-conceptions and to engage in particular activities as well as to receive encouragement for repeating those activities. For example, the availability of feminine-stereotyped toys prompts caregiving behaviors (e.g., feeding a doll), whereas the availability of masculine-stereotyped toys prompts instrumental behaviors (e.g., constructing a model). Stereotyped girls' toys (dolls) provide girls with practice in learning rules, imitating behaviors, and using adults as sources of help for certain outcomes, whereas stereotyped boys' toys (models) refine visual/spatial skills, problem solving, independent learning, self-confidence, and creativity (Martin & Dinella, 2002). The creation and affordance of children's opportunities mean that parents do not need to model, reinforce, or scaffold gendered beliefs or behaviors because contexts or implements per se may ordain or elicit desired gendered beliefs or behaviors.

*Desiderata: Specificity, moderation, transaction, thematicity, and direct and indirect effects.* A common historical assumption in parenting (stemming in part from the trait view) was that the overall level of parental involvement or stimulation affects the child's overall level of development. An example of this simple model suggests that language acquisition in children is determined (at least to some degree) by the sheer amount of language children hear (Hart & Risley, 1995). Increasing evidence suggests, however, that more sophisticated and differentiated pathways govern parenting effects. First, specific (rather than general) parental cognitions and practices appear to relate concurrently and predictively to specific (rather than general) aspects of child competence or performance. It is not the case that the overall level of parenting directly affects children's overall level of functioning and can compensate for selective deficiencies: Simply providing an adequate financial base—a big house, or the like—does not guarantee, or even speak to, children's development of healthy eating habits, an empathic personality, verbal competence, or other valued capacities. The *specificity principle* states that specific cognitions and practices on the part of specific parents at specific times exert specific effects over specific children in specific ways (Bornstein, 2002a, 2013b). The specificity principle helps to explain numerous observations and discrepancies in the parenting literature. With respect to time, for example, it has been observed: "Parents who are highly effective at one stage in the child's life [are] not necessarily as effective at another.... Similar practices do not necessarily produce the same effects at successive stages in [a] child's life" (Baumrind, 1989,

p. 189). Similarly, maternal responsiveness to infants' vocalizations predicts child vocabulary size, but not symbolic play, whereas maternal responsiveness to the same infants' symbolic play predicts child symbolic play, but not vocabulary (Tamis-LeMonda, Bornstein, Baumwell, & Damast, 1996; see also Paavola, Kunnari, & Moilanen, 2005). Parental responsiveness to child distress, but not warmth, predicts children's regulation of negative affect and greater empathy and prosocial sensitivity; parental warmth, but not responsiveness to distress, predicts children's regulation of positive affect (Davidov & Grusec, 2006). The specificity principle is apparently counterintuitive because, according to the Civitas Initiative et al. (2000) national survey, a majority of parents simplistically thinks that the more stimulation a baby receives, the better off the baby is. In fact, parents need to carefully match the specific amounts and kinds of stimulation they offer to a specific child's specific level of development and specific interests, temperament, mood at the moment, and so forth. The specificity principle accords with a relational developmental systems view of parenting and with the multidimensional and modular character of parenting.

One implication of specificity is that parenting effects are likely *moderated* by multiple conditions. To detect regular relations between antecedents in parenting experience and environment on the one hand and outcomes in child characteristics on the other, researchers need to seek and to find more precise combinations of independent and dependent variables. For example, the same parenting practice might differ in its effectiveness when employed by parents with different parenting styles: Parents' use of punitive discipline is linked with problematic adjustment among children from nonauthoritative families but not authoritative families (Fletcher, Walls, Cook, Madison, & Bridges, 2008). Gender-differentiated parenting is more probable in structured settings like problem-solving tasks than in relatively unstructured ones like free play (Leaper, Anderson, & Sanders, 1998). The supermarket checkout line is a more challenging context to parental authority than the playground (Lecuyer-Maus, 2000).

Consider again the role of timing as a moderator of parenting effects. Psychoanalytic, learning, ethological, and attachment theories of parenting posit that early parenting influences the child at a particular time point and the consequences for the child endure, independent of later parenting. Mother-infant attachment status has a direct effect on young adolescents' emotional maturity and scholastic skills net concurrent representations of relationships, self-esteem, and changes in caregiving arrangements

(Aviezer, Sagi, Resnick, & Gini, 2002). Alternatively, early effects may not persist or they may be altered or supplanted by subsequent conditions that are more consequential. On this argument, some theorists challenged the importance of early experience (Kagan, 1998; Lewis, 1997). Empirical support for contemporary experience models of parenting effects typically consists of recovery of function from early enrichment or deprivation and failures of early interventions to show sustained effects (Clarke & Clarke, 2000; Peisner-Feinberg et al., 2001). Specific language input is unrelated to certain verbal skills early in development, but is related later in development (Huttenlocher, Vasilyeva, Cymerman, & Levine, 2002). At 5½ years, concurrent television exposure, but not sustained television exposure to that point, is associated with diminished social skills (Mistry, Minkovitz, Strobino, & Borzekowski, 2007). A cumulative (or additive and stable) experience model combines these views and contends that repeated experiences are requisite to shape child development. That is, a parent-provided experience at any one time (antecedent or contemporary) does not necessarily affect the child, but meaningful longitudinal relations are structured by parenting interactions repeating continually, and aggregating, through time (Belsky & Fearon, 2002). Children of mothers who are consistently responsive show higher levels of certain cognitive skills, and greater increases in them over time, than children whose mothers show only early or only late responsiveness (Landry, Smith, Swank, Assel, & Vellet, 2001). Although longitudinal data provide evidence for early, contemporary, and cumulative experiential effects between parents and children, for the most part children are reared in stable environments (Holden & Miller, 1999), so that cumulative experiences are likely.

A concomitant of moderation is *meaning*. Depending on several factors, the same parenting cognition or practice can have the same or different meaning, just as different parenting cognitions or practices can have the same or different meanings (Bornstein, 1995, 2013b). For example, parental control is equated with loving concern and is associated with adolescent perceptions of warmth among Asian and Latino/a, but not European, Americans (Chao & Tseng, 2002; Harwood et al., 2002), and physical discipline administered by some parents might communicate concern for children's welfare and, therefore, carry a different meaning than does physical discipline administered by other parents (McLoyd & Smith, 2002). Reciprocally, parental warmth is a protective factor against children developing externalizing problems in European American families, but it is a

risk factor for children in African American families (Lau et al., 2006).

Human beings do not develop in isolation. Throughout development, people and their experiences jointly create and regulate their socialization. Traditionally, the socialization processes asserted to convey intergenerational transmission of beliefs and behaviors include identification, conditioning, reinforcement, and modeling, teaching and scaffolding, and the provision of opportunity. It has been easy to assume that parents and other adult socializers are responsible for, say, gender-differentiated conduct in children. However, it is also the case that daughters elicit more feminine stereotypes (affection) and sons more masculine ones (building). Child effects on parent are in play and coexist with parent effects on children (Lerner, 1982), and these mutual influences interact to consolidate socialization in children (Bornstein, 2013a). The principle of *transaction* in child development acknowledges that characteristics of an individual shape his or her experiences, while, reciprocally, experiences shape the characteristics of the individual through time (Bornstein, 2009). Bell (1968; Bell & Harper, 1977) was among the first to emphasize the key role that bidirectional effects play in child socialization. By virtue of their unique characteristics and propensities—state of arousal, perceptual awareness, cognitive status, emotional expressiveness, and individuality of temperament and personality—children actively contribute, through their interactions with their parents, to producing their own development. Children influence which experiences they will be exposed to, and they also interpret and appraise those experiences and so (in some degree) determine how their experiences affect them. Child and parent bring distinctive characteristics to, and each is believed to change as a result of, their interactions with one another; parent and child alike then enter later interactions as changed individuals. So, child temperament and maternal sensitivity operate in tandem to shape one another and eventually the attachment status of the child (Rothbart, 2011); parental psychological control and adolescent depressive symptoms exert reciprocal effects (Soenens, Luyckx, Vansteenkiste, Duriez, & Goossens, 2008); parents' use of corporal punishment predicts subsequent child behavior problems, while children with more behavior problems elicit more corporal punishment from their parents (Lansford et al., 2011), and mothers' and fathers' harsh verbal discipline provokes increases in adolescent conduct problems and depressive symptoms as adolescent misconduct elicits increases in mothers' and fathers' harsh verbal discipline (Wang & Kenny, 2013). In

the end, effects in socialization run in both directions—parent-to-child and child-to-parent—and this consistency is mutually reinforcing.

An important in-the-moment instantiation of transaction is *attunement*, the dyadic, dynamic, and wholistic intricate patterns of sensitive mutual understandings and unfolding synchronous interactions between children and their parents (Bornstein, 2013a; Deater-Deckard & O'Connor, 2000; Harrist & Waugh, 2002). Attunement expresses the active adaptation of partners, of sensing and reading one another's state and adjusting biology and behavior accordingly. Parents and children share many characteristics, and attunement is a multilevel phenomenon with correspondences in the hormonal, autonomic, and central nervous system as well as in affective, cognitive, and behavioral domains. When interactions with caregivers fall out of attunement by becoming mistimed or mismatched, children and parents both experience distress.

Socialization messages are often delivered consistently in different social contexts via different social channels. Through *themacity*, diverse processes of socialization work in concert with one another. Studies of children's household work indicate patterns that are pertinent to a thematic consideration of gender socialization, for example. First, mothers and fathers typically model a traditional gender-stereotyped division of labor in their own household work (Coltrane, 2000). Second, parents tend to allocate gender-typed chores to children, typically assigning childcare and housework to daughters and allotting maintenance work to sons (Pinzas, 2008; Raley & Bianchi, 2006). Third, mothers teach daughters how to change a baby's diaper, and fathers teach sons how to build a model. On outings to museums parents focus on explanations of scientific content with their boys more than with their girls and so may foster boys' greater interest in and knowledge about science (Crowley, Callanan, Tenenbaum, & Allen, 2001). Fourth, parents instill gender development in their children by placing girls and boys in gender-distinctive contexts (e.g., rooms with certain furnishings; Pomerleau, Bolduc, Malcuit, & Cossette, 1990). Last, children actively participate in gender-organized activities, and children prefer gender-stereotyped clothes and being delegated gender-stereotyped chores (Schuette & Killen, 2009).

Finally, effects of parenting cognitions and practices on children may be *direct* or *indirect*. Much empirical research attests to short- and long-term direct influences of cognitions and practices of parents on children's development, and diverse processes (socialization, teaching and scaffolding, conditioning, reinforcement, and modeling)

likely convey direct effects. Indirect effects are more subtle and perhaps less noticeable than direct effects, but no less meaningful. One type of indirect effect includes the opportunity structures parents provide. Another concerns interparental relationships. Effective coparenting in marital support and communication bodes well for child development (McHale et al., 2002): For example, fathers' education predicts the quality of mother-child engagements (Tamis-LeMonda et al., 2004). An additional type of indirect effect concerns the effect pathway. Here two approaches have been distinguished. Mediation of parenting practices (Y) in a relation between parenting cognitions (X) and child outcomes (Z) normally requires establishing a relation between X and Z and then assessing whether that direct X–Z relation attenuates when Y is added to the model as an intermediary (Cole & Maxwell, 2003). By contrast, a cascade is a developmental relation where X uniquely affects Y, which in turn uniquely affects Z, separate from any X–Z relation or other intrapersonal and extrapersonal factors (Masten & Cicchetti, 2010). A cascade explains a key temporal process in the model regardless of any direct relation from X→Z.

### Summary

Parenting expresses itself in both the beliefs parents hold and the behaviors they exhibit. Parenting cognitions include, for example, perceptions about, attitudes toward, and knowledge of all aspects of parenting and childhood. Out of the dynamic range and complexity of individual activities that constitute parenting, major domains of parent practices have been discerned. These domains are conceptually separable, but each is developmentally significant. Whether direct or indirect, parental influences on children appear to operate on several noteworthy principles, such as specificity, moderation, transaction, and thematicity.

### PARENTING EFFECTS

As indicated at the outset of this chapter, parenting has two-fold significance: One is as a phase of adult life, and the other is as an instrumental activity. To be meaningful in child development, parenting must have some demonstrated predictive validity, or to reiterate a contemporary challenge: *Does parenting matter?*

"The apple does not fall far from the tree." "As the twig is bent, so grows the tree." These sayings reflect the belief (some would say *assumption*) that the attitudes and actions of children's parents, and the environments they create,

shape children and the course of their intellectual, psychological, behavioral, and social development (Collins et al., 2000; Domitrovich & Bierman, 2001; Roksa & Potter, 2011). (The agrarian metaphor for parenting is omnipresent, stretching as it does from “kindergarten” to “culture.”) The early literature on “parenting effects” built up as a natural consequence of this unidirectional way of thinking about socialization, and much of it relied on parent-child correlations as its evidentiary base. In such study, parents who did more of something had children who did more of a related something. However true it may be that parents influence children, we recognize that correlation does not prove causation, that the arrows of influence in an association may run in either or both directions (*viz.*, that parents influence children and children influence parents), and that associations between parent-rearing and child characteristics could arise from shared third familial or extrafamilial factors (parents and their children share genes, come from the same socioeconomic stratum, etc.). There follows a brief comment on parenting effects derived from correlational designs and thereafter a more extended discussion of more robust supports of parenting effects. This section of the chapter then speaks to complementary information and challenges to parenting effects from behavior genetics and group socialization theory.

### Correlational Designs

Most studies of parent-child relations have employed correlational designs, the resultant associations have usually been modest, and early advocates of “socialization” often assumed the truth value of  $r$ , only interpreted directional effects, and sometimes overstated its implications. By consensual reckoning, parenting is reported to share 20% to 50% of common variance with child outcomes (Conger & Elder, 1994; Reiss, Neiderhiser, Hetherington, & Plomin, 1999). Some correlational studies address the more obvious shortcomings of the design. For example, Patterson and Forgatch (1995) reported substantial correlations between parents’ disciplinary and monitoring practices and children’s negative and coercive behavior both at home and in out-of-home contexts, and Chilcoat and Anthony (1996) reported a significant increase in risk of adolescents’ drug sampling for every unit of decrease in parental monitoring after partialling age, gender, and ethnicity. The foregoing illustrations provide stronger inferences than simple associations because, in the case of the first, associations between parenting and child development at least transcend a common context, and, in the case of the second,

associations obtain after common-cause third-variable controls are instituted. In actuality, the sizes of zero-order correlations between parent cognitions or practices and child characteristics vary considerably depending on what parent and child variables are considered, the way they are measured, the length of time between parent predictive and child criterion measurements, what kind of analyses are conducted, which children or families living in which circumstances are studied, and whether background variables are statistically controlled (Bornstein, 2013b). For example, depending on the topic and informant behavioral observations and parent or child reports yield different effect sizes (see Collins et al., 2000).

Furthermore, it is not reasonable to expect generalizations about the nature and effects of specific parent-child associations to span all ages/stages and all domains of child development. On specificity, parents might foster the development of specific talents (e.g., by providing sports practices or music lessons) and might influence some characteristics (e.g., religious affiliation or political persuasion), but may have less influence on others (e.g., alcohol consumption with peers). Longitudinal associations, adoptive parent-adopted child associations, and other methodological strategies that supplant simpler zero-order correlations constitute further design improvements on cross-sectional and genetically related parent-child approaches. To overcome the critique of parenting effects as mere epiphenomena of shared genetics, for example, some designs have included biological-adoptive comparisons. Adoption studies separate the effects of environmental and genetic factors (although the standard design can be compromised by gene-environment interactions). For example, Bjoerklund, Lindahl, and Plug (2006) reported strong associations between adoptive mother and father educational achievement and adopted children’s schooling. Utilizing a design that included adoption triads of birth mothers, adopted child, and adoptive parents, Marceau et al. (2013) discovered distinct patterns of associations among genetic (birth mother psychopathology), prenatal (obstetric and pregnancy complications, toxin exposure), and postnatal influences (adoptive parent 18-month internalizing symptoms to toddler behavior problems at 27 months).

Contemporary parenting research has also moved beyond a fixed focus on main effects of parenting toward concerns with process and understanding more complex parent-child interactions. For example, a given parent-provided experience may have different effects on a child depending on the child’s traits. Tienari, Wynne, Moring, Lahti, and Naarala (1994) contrasted children with a



schizophrenic biological parent and adopted children who did not carry this risk factor to illustrate how a predisposition can either manifest itself or not, depending on whether certain triggering environmental conditions are present. Adoptees who had a schizophrenic biological parent were more likely to develop a range of psychiatric disorders (including schizophrenia) than adoptees not at risk, but only if they were adopted into dysfunctional families. Bohman (1996) studied adopted children whose biological parents did or did not have a history of criminality. Among adoptees who carried a risk factor from their biological parents, those who had been adopted into dysfunctional homes were more likely to engage in criminal behavior than those whose adoptive parents provided stable and supportive environments.

### Experimental Designs

Experimental manipulations advance beyond parent-child correlations in attempts to uncover causal relations between children's parents and their development. Perhaps the strongest statement that could be made about parenting effects would be based on experimental treatments in which parents are assigned randomly to an experimental versus a control group with resulting changes in the beliefs or behaviors of both the parents and their otherwise untreated children in the experimental group relative to the controls. Such experiments show (a) that the treatment alters parenting in the experimental group, (b) that there are no changes in the comparison control group, and (c) that change in the parent effects a change in the child. The extant literature appeals to animal experiments and three kinds of experiments with human beings: natural experiments, designed experiments, and experimental interventions.

*Animal experiments.* Experiments with animal populations provide invaluable and unique data about parenting effects because many informative manipulations (from sacrificing animals to drug administration to deprivation to cross-fostering) are unethical with human beings. Classic work directly germane to this point dates from Harlow's (1958) studies on sustenance versus contact comfort given to infant monkeys. Harlow raised infant monkeys with only two simple mother-surrogate models available to them: One was made from wire mesh and had an attached milk bottle from which the infant monkeys could feed, and the other had a soft cloth surface but did not deliver any food. Despite the wire mother being a source of nourishment, infant monkeys preferred to cling to the cloth mother and,

when frightened, almost always held her tightly. When put into an unfamiliar environment, the presence of the cloth mother reduced infant panic reactions, and infant monkeys used it as a safe haven from which to explore. These differential rearing effects also endured in monkeys' later peer interactions and mating. Contemporary cross-fostering experiments in nonhuman animals support causal links from parenting (Champagne & Meaney, 2001).

Males in the biparental marmoset species *Callithrix jacchus* engage in high levels of parenting and express enhanced circulating reproductive hormones, such as Arginine vasopressin (AVP). The brains of first-time and experienced marmoset fathers have a greater abundance of AVP V1a receptors and greater density of V1a receptor-labeled dendritic spines on pyramidal neurons in prefrontal cortex than nonfathers (Kozorovitskiy, Hughes, Lee, & Gould, 2006). Woller et al. (2012) examined the release of several reproductive neurocrines, including oxytocin (OT) and prolactin (PRL), in cultured explants of the hypothalamus of paternally experienced male marmosets compared to naïve, paternally inexperienced males. OT and PRL levels were higher than levels found in inexperienced males, suggesting that paternal experience prompts secretion of neurocrines in a male biparental primate. Kenkel et al. (2012) exposed reproductively naïve male prairie voles to infants or control manipulations and measured plasma concentrations of OT and AVP in the paraventricular nucleus of the hypothalamus; pup exposure increased activation of neurons that stained for OT and AVP.

Animal experiments in epigenetics further support parenting effects. Approximately 1 in every 33 children in the United States is born with a birth defect, most with unknown nongenetic causes (Centers for Disease Control and Prevention, 2013a). Diet folate deficiency is, however, associated with birth defects. Male mice that were fed a diet containing less than 15% of the recommended amount of folate for their lifetime (from the time they were fetuses through to reproductive maturity) showed deficiencies in fertility as well as litter offspring with approximately 30% more birth defects than controls (Lambrot et al., 2013). In another study, male mice were taught to fear the smell of cherry blossoms (through associative conditioning with foot shocks); they were then mated with females. Their offspring, raised to maturity without ever have been exposed to the scent of cherry blossoms, demonstrated fearfulness the first time they were exposed to the scent, had a lower threshold for cherry blossom detection, and their brains had more neurons specialized for the odor. The pups of females artificially inseminated with sperm of fear



conditioned father mice showed similar effects (Dias & Ressler, 2013). Some characteristics outside DNA appear to be inherited from parents (see also Vassoler, White, Schmidt, Sadri-Vakili, & Pierce, 2012).

*Natural experiments.* Studies of children with genetic endowments that differ from those of their nurturing parents provide one naturally occurring means of simultaneously evaluating the impacts of parenting *qua* experience vis-à-vis hereditary endowment on child development. In (ideal) natural quasi-experiments, say of adoption, one child shares genes and environment with biological parents, one child shares genes but not environment with biological parents, and one child shares environment but not genes with adoptive parents. In France, a cohort of children was identified who had been given up in infancy by their working-class parents and adopted by middle-class parents. These children all had biological siblings or half-siblings who remained with their biological families and were reared in impoverished circumstances. No selective factors differentiated the two groups. When tested in middle childhood, the adopted children's IQs averaged significantly higher than those of their natural siblings, and children who remained with their biological mothers were more likely to exhibit failures in school performance (Duyme, Dumaret, & Stanislaw, 1999). Adoptive mothers' sensitivity and support are associated with better social and cognitive development in adopted children at the age of 7 (Stams, Juffer, & van IJzendoorn, 2002) as well as with stronger attachment relationships at the age of 14 (Beijersbergen, Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2012).

Contemporary technology has afforded even more penetrating natural experiments. Where previously it was not possible to assess human offspring whose prenatal environment was provided by a biologically unrelated mother, this is now feasible because of the increased use of in vitro fertilization (IVF) and surrogacy as a means of conception. For example, maternal stress during pregnancy is associated with increased emotional and antisocial problems in children even when controlling for important confounds (Rice et al., 2007; Swanson & Wadhwa, 2008; Talge, Neal, Glover, & Early Stress Translational Research Prevention Science Network, 2007). Prenatal stress could arise through early environmentally mediated programming effects on the fetus, or through factors that influence mothers during pregnancy and which are inherited. Rice et al. (2010) employed a prenatal cross-fostering design, including pregnant mothers who were related or unrelated to their child as a result of IVF and surrogacy, to disentangle

inherited and environmental influences. Their logic was as follows: If links between prenatal stress and offspring outcome are environmental, the association should be observed in unrelated as well as related mother-child pairs. Associations between prenatal stress and offspring birth weight, gestational age, and antisocial behavior were seen in both related and unrelated mother-offspring pairs, consistent with environmental links being determinative. The association between prenatal stress and offspring anxiety in related and unrelated groups appeared to be due to current maternal anxiety/depression rather than prenatal stress. By contrast, the link between prenatal stress and offspring attention deficit hyperactivity disorder was only present in related mother-offspring pairs and therefore likely attributable to genetic factors.

*Designed experiments.* Studies that randomly assign human families to treatment versus control groups and that intervene with the parents but do not simultaneously treat the children are rare (for obvious reasons), but several have shown that treatment can change parental thinking and action toward children in specified ways and, in consequence, child development. For example, Stein et al. (2012) randomized mothers to either a worry/rumination prime (WRP) or a neutral prime (NP) and assessed mother-infant interactions before and after priming. Type of priming predicted maternal cognitions. WRP resulted in more negative thoughts, higher thought recurrence, and more self-focus relative to NP. Moreover, compared with NP, WRP inhibited maternal responsiveness and decreased maternal vocal interactions. Experiments modify parenting practices as well. Belsky, Goode, and Most (1980) reinforced mothers' didactic interactions with their young children during play in an experimental group and found increases in mothers' didactic interactions and higher exploratory play in children compared to a control group. When Anderson, Lytton, and Romney (1986) paired conduct-disordered boys with mothers of conduct-disordered boys and with mothers of normal boys, conduct-disordered boys elicited negative parenting from both sets of mothers. (This experimental setting controls for genetic effects and shows that characteristics of the child contribute to parenting.) Van den Boom (1994) trained lower-SES mothers to respond sensitively to their children; in this way, they modified mothers' negative responses to their child's irritability, and they reduced avoidant attachment in distress-prone children. Similar experiments attest that parenting is malleable and that change in parenting predicts change in children's language (Goldstein, King, & West, 2003), attachment (Heinicke, Rineman, Ponce, & Guthrie, 2001),

aggressiveness (Patterson, Dishion, & Chamberlain, 1993), behavior management (Webster-Stratton, 1990), and school adjustment (Forgatch & DeGarmo, 1999).

Other, even invasive, psychobiological experiments are increasingly common. Intranasal administration of neuropeptides can reach the central nervous system, and OT is known to play a key role in regulating social behavior and supporting the parent-infant bond in mammals (MacDonald & MacDonald, 2010). Naber, van IJzendoorn, Deschamps, van Engeland, and Bakermans-Kranenburg (2010) videorecorded fathers during a play session with their toddlers once following intranasal OT administration and then after intranasal placebo administration. Fathers increased their support for learning and exploration with respect for the child's autonomy following OT administration. Utilizing a double-blind, placebo-controlled crossover design, Weisman, Zagoory-Sharon, and Feldman (2012) observed fathers and their 5-month-old infants twice in a face-to-face still-face paradigm following administration of OT or placebo to the father. OT administration increased fathers' salivary OT and key parenting behaviors that support parent-infant bonding. Moreover, parallel increases were found in infant salivary OT and engagement behavior, including social gaze, exploration, and reciprocity. In other words, OT administration had parallel effects on the treated parent and untreated child.

*Parenting interventions qua experiments.* Interventions with parents have two construals. Near the end of this chapter, interventions are discussed as practical guides to improve parenting clinically and to inform policy. Intervention trials also can be interpreted as experimental manipulations that test theoretical models of parenting effects (Cowan & Cowan, 2002; van Doesum, Riksen-Walraven, Hosman, & Hoefnagels, 2008). An intervention designed to facilitate maternal responsiveness enhanced children's language skills (Landry, Smith, Swank, & Guttentag, 2008); a second to improve parents' behavior support found positive effects on key indicators of children's school readiness (Lunkenheimer et al., 2008); and a third to boost parents' positive behavior practices reduced problem behaviors in young children (Dishion et al., 2008). Thus, many interventions focus on parents, but the ultimate outcome is a concern with children (DeGarmo, Eddy, Reid, & Fetrow, 2009; Powell, 2006). Forgatch, Patterson, and DeGarmo (2005) found that fidelity to a therapy intervention protocol predicted change in parents' practices and children's behavior, and Cowan, Cowan, Ablow, Johnson, and Measelle (2005) enrolled parents in classes on effective parenting just

prior to their children's kindergarten entry and later recorded better and lasting school adjustment and higher academic achievement for children in kindergarten and first grade, compared to children of parents who attended a comparable series of discussion groups without the effective-parenting emphasis.

### Challenges to Parenting Effects From Behavior Genetics and Group Socialization Theory

In the context of this methodological diversity of support and robustness of findings, it is surprising to find critics who contend there is still little that children's parents do which influences child development, but they rather believe that heredity and peers hold sway. It is illogical and nonscientific to assert the preeminence of one cause when there are many and each in its own way contributes to some effect. The constructive enterprise is really to understand how all the relevant forces might work in concert. The following brief evaluations cumulate over the hard-won knowledge of several critiques (see, e.g., Collins et al., 2000; Lerner, Rothbaum, Boulos, & Castellino, 2002; Maccoby, 2000; Vandell, 2000). The arguments for genetic and peer influences on child development complement, but do not supplant, the force of parenting effects. That said, these twin contentions hold water and have made it incumbent on socialization researchers to demonstrate parenting effects taking each into consideration.

*Behavior genetics.* Behavior genetics (BG) seeks to understand biological sources of variation in human characteristics (Plomin, DeFries, McClearn, & McGuffin, 2008). By studying individuals of varying genetic relatedness (identical and fraternal twins, biological and adopted siblings who share or do not share the same experiences), behavioral geneticists attempt to estimate the amount of variation (the heritability;  $h^2$ ) in characteristics that can be explained by genetic endowment contra socialization. Heritability denotes inheritance of DNA and refers to the "main effect" of genetics on individual differences, but does not necessarily imply genetic determinism; for discussions of interpretations and misinterpretations of heritability, see Plomin et al. (2008), Rutter (2006), and Visscher, Hill, and Wray (2008). BG assumes that sources of variation in a child characteristic can be separated into independent genetic (G) and environmental (E) components that together (with error variance) add to 100% of the variance in a characteristic. G effects are additive (A) and dominant (D), and E effects are shared (C) and non-shared plus error (E). (E is not usually measured directly,

but estimated to be the residual variance not accounted for by G; see Caspi, Taylor, Moffitt, & Plomin, 2000.) Some BG research contends that (a) genetic endowment accounts for child characteristics better than socialization; (b) children with different genetic predispositions elicit different reactions from their parents; and (c) nonshared environments (conceptualized as experiences in and out of the family that differentiate individuals) play a greater part in child development than shared factors (conceptualized as experiences in and out of the family that are common to individuals). Oddly, perhaps, parenting is often only included in the shared environment.

A full consideration of this literature vitiates many central BG claims. For example, G and E do not account for any child characteristic in a zero-sum way (Gottlieb, 1995; Rose, 1995; Turkheimer, 1998). The prevailing relational bioecological perspective on human development “stresses the interactive and synergistic, rather than additive and competitive, nature of the links between the family and other influences” (Collins et al., 2000, p. 227). Everything that human beings are or do is an ineluctable joint function of their genes and their life experiences (Elman et al., 1996). Furthermore, experience may contribute to development at the same time heritability is at work. Some environmental factors affect a group without altering the rank order of individuals within the group. Correlations between parenting and child characteristics may reflect genetic linkages (Finkel & Matheny, 2000) but also bidirectional reciprocal interactive processes. BG assigns both child and parent parts of parent-child covariances to the genetic component in the  $G + E = 100\%$  formulation. It may be that the child's part in parent-child covariance (so-called evocative effects) is genetic, but assigning the parent contribution to genetics is debatable (Maccoby, 2000). In a developing transactional relationship, such as the one between parent and child, the child influences the parent and the parent influences the child.

Furthermore, BG designs in themselves exhibit evidence of parenting effects. For example, using a parent-offspring BG design, Deater-Deckard et al. (2006) found for both genetically related and adoptive mother-child dyads that corporal punishment and child externalizing behaviors were positively correlated (even if only in dyads that were low in maternal warmth). O'Connor, Deater-Deckard, Fulker, Rutter, and Plomin (1998) identified two groups of adoptees: one at genetic risk for antisocial behavior (their biological mothers had a history of antisocial behavior) and the other not at risk. At several points during the adoptees' childhood, O'Connor et al. assessed the children's

characteristics and the adoptive parents' child-rearing methods. Children carrying a genetic risk for antisocial behavior were more likely to receive negative socialization from their adoptive parents, but parental negative behavior made an independent contribution to children's externalizing, over and above the children's genetic predispositions. Maternal expressed emotion is an environmental risk factor for children's antisocial behavior problems. Horn and Loehlin (2010) reported that the IQ of adopted children approximates the IQ of their adoptive parents and exceeds the IQ of their biological parents. This effect follows from how adoptive caregivers parent. In a similar way, Neiss and Rowe (2000) found that parents' education was associated with adopted adolescents' verbal IQ.

Twin studies aim at partitioning the population variance due to G and E effects by comparing monozygotic (MZ) and dizygotic (DZ) twin correlations or concordances (O'Connor & Croft, 2001). In various twin studies, the quality of the parent-child relationship has been shown to contribute to child outcomes independent of genetic factors (Peña & Champagne, 2012). For example, using a nationally representative birth cohort of twins, Caspi et al. (2004) accounted for behavioral differences between MZ siblings growing up in the same family after genetic influences on children's behavior problems were taken into account by assessing which child received more negative emotional expression and which received more warmth. Within pairs, the twin receiving more maternal negativity and less warmth had more antisocial behavior problems. Twin data support the hypothesis that family environments make substantial contributions to child development (Plomin et al., 2008; Wong et al., 2010). Genetically informed research designs support socialization effects.

BG assumes that parenting is a shared experience for siblings, and because shared environment effects have sometimes proven to be small, parenting effects must be small. However, even within the same family and home setting, parents do not behave toward different children in the same way, parenting is not perceived by different children in the same way, and parenting does not affect different children in the same way (Suitor et al., 2009; Turkheimer & Waldron, 2000). Nonshared environmental effects refer to the influence of events specific to an individual's life, such as specific parenting, illness, or particular friends, which are not shared by other family members. The distinction between shared and nonshared environmental effects is based on whether such environmental influences make siblings more or less alike. BG offers two explanations to account for individual variation among siblings. The first

is within-family environmental differences, and the second is differential experience outside the home. To the extent that siblings perceive differential parental treatment, they experience different environments, which increases the likelihood that they also develop differently. Genes may contribute to making siblings 50% alike, but (as is universally recognized) siblings are normally very different from one another, and it is widely held that siblings' different experiences (their nonshared environments) in growing up contribute to making them distinctive individuals. In a study of 1-year-old twin pairs (Bokhorst et al., 2003), only nonshared environmental factors accounted for the variance in twin concordances of disorganized versus organized attachment, while both shared and nonshared environmental effects accounted for the variance in secure versus insecure attachment.

The following additional considerations stoke the socialization fires (Charney, 2012). Heritability estimates are themselves often indeterminate and variable (Klahr & Burt, 2014), as estimates vary depending on the dependent construct, source of information, and other methodological factors; genes may function differently in different environments and at different times (Naumova, Lee, Rychov, Vlasova, & Grigorenko, 2013; Szyf & Bick, 2013); and exposure to specific environments may be influenced by the individual's genetic make-up (Rutter, Moffitt, & Caspi, 2006). Estimates derived from twin studies might exaggerate genetic contributions because MZ twins have more similar environments than do even same-gender DZ twins. Meta-analyses show that heredity rarely accounts for as much as 50% of the variation among individuals in a particular population (Klahr & Burt, 2014; McCartney, Harris, & Bernieri, 1990). In genetically informed adoption and twin research, degree of biological relatedness between individuals, not specific markers of genetically linked characteristics in the two individuals, is often the primary focus. However, it has proven difficult to identify actual genes responsible for the heritability of complex traits, the so-called missing heritability problem (Plomin, 2012). In the view of some, even powerful BG methods have so far failed to reveal a single *bona fide* replicable gene effect pertinent to the normal range of variation in human intelligence and personality (Wahlsten, 2012). Work on the epigenome, the dynamic part of the genetic code that can be altered by environmental conditions, opens the door widely to parenting effects (as noted earlier). For example, poor quality parenting results in DNA methylation that influences gene expression in a manner that undermines children's mental health (Monk, Spicer, & Champagne, 2012).

Intelligence and personality have been the child outcomes that are the focus of most heritability studies, but genetic contributions might be greater for some human characteristics (intellect, temperament) than for others (religion, politics), and contemporary parenting studies are concerned with a much broader range of issues, so the case for parental influence may be greater for many of children's learned behaviors. Parents are concerned not only with the "final product" of their parenting. They live with their children and are involved in quotidian processes of parenting and cope with a constantly changing set of childrearing challenges. Children's fruit and vegetable consumption is shaped, not just by children's taste preferences, but also by their mother's nutritional knowledge, by her conceptions of the health benefits of eating more produce, and by her own consumption of fruits and vegetables (Galloway, Fiorito, Lee, & Birch, 2005). Many of these concerns of parenting are not addressed by BG.

*Group socialization theory.* We change when we participate in peer group interaction (Lewin, 1947; Steinberg, 2011), and J. R. Harris (1995, 1998) asserted that experiences outside the home, and especially within the peer group, constitute the major environmental source of influence on children's development. According to Harris (1995, p. 463), group socialization affects children's behavior, language, cognitions, emotions, and self-esteem, whereas dyadic relationships with parents (or teachers or mentors) have minimal effects on these psychological characteristics. Harris went so far as to ask, "Do parents matter?"

The challenge Harris explicitly raised was subsequently addressed in several empirical efforts (many of whose titles incorporate direct responses to her question). For example, Galambos, Barker, and Almeida (2003) studied the relative influences of parenting practices of support, behavioral control, and psychological control versus deviant peers on trajectories of externalizing and internalizing problems in adolescents. They found that parents' firm behavioral control halted the upward trajectory in externalizing problems among adolescents, which suggests that parenting exerts an important influence on adolescents' lives and does so even in the face of potentially negative peer influences. Subsequently, Wood, Read, Mitchell, and Brand (2004) compared the influences of parenting cognitions (disapproval versus permissiveness for drinking) and parenting practices (nurturance and monitoring) versus peer influences (alcohol offers, social modeling, and perceived norms) on alcohol abuse in older adolescents. Parental influences moderated peer influences such that higher levels of perceived parental involvement were associated with



weaker relations between peer influences and adolescent alcohol abuse, which indicates that parental influences are continuing. Hoque and Ghuman (2012) demonstrated similar parental versus peer effects on adolescent alcohol use in a South African sample. A. Harris and Goodall (2008) even showed that parents, teachers, and pupils agree that parents' engagement in learning in the home is most likely to lead to positive learning outcomes. Although 12- and 14-year-olds may turn to peers to fulfill attachment functions of proximity seeking and safe haven, 10-year-olds describe more trusting and communicative relationships with parents than with peers, and children at all three ages report that their parents serve as their primary secure base (Nickerson & Nagle, 2005). These are just a few (among many; Udel, Donenberg, & Emerson, 2011) studies that answered Harris's question in the affirmative, replying that *vis-à-vis* peers *parents do matter*.

Several additional counterarguments to the radical peer socialization proposition mitigate its claims: Parents and peers exert joint influences on the developing child (Bornstein, Cote, Haynes, Suwalsky, & Bakeman, 2012). Masten, Juvonen, and Spatzier (2009) found that perceived parent values predict children's academic and social behaviors over a range of ages, whereas peer group norms predict social behavior over the same range but academic behavior only for older children. The proclivity in children to select, think, and behave as their like-minded peers do might account for some similarities between them and their friends. However, children are not randomly assigned to peer groups; rather, parents and parent-child relationships influence which peers are available to children and which peers children select. Group socialization might apply to some (likely transient), but probably not to other (likely enduring), beliefs and behaviors. Also, children vary in their susceptibility to peer influence, and parenting is a likely source of children's differential susceptibility. In most cases, moreover, infants and very young children are hardly exposed to meaningful peer influence (with the exception of siblings).

Social relationship theory posits that multiple associations are important to children because they meet different developmental needs (Vandell, 2000). Parents may serve as a source of love, affection, security, protection, advice, and limit setting. Siblings may offer opportunities related to social understanding, conflict management, and differential status. Peers may provide mutual commitment, support, and trust. Teachers and nonparental caregivers may be influential for their expertise and access to opportunity. In the end, Harris (1995) conceded:

It is important to note that [group socialization theory] does not imply that children can get along without parents. Children are emotionally attached to their parents (and vice versa), are dependent on them for protection and care, and learn skills within the home that may prove useful outside of it; these facts are not questioned. (p. 461)

In short, many individuals in children's lives influence their development; children's parents are likely first among possible equals.

## Summary

Whereas weaker correlational designs once dominated the study of parenting, contemporary investigators have turned to a panoply of genetically informed and experimental designs to demonstrate parenting effects more robustly and conservatively. Even parenting's most strident critics now acknowledge that parents serve important socializing functions in children's lives: "Parents are the most important part of the child's environment and can determine, to a large extent, how the child turns out" (Harris, 1998, p. 15). Of course, biological mothers and fathers contribute directly to the nature and development of their children by passing on heritable characteristics. At the same time, all prominent theories of development put experience in the world as either the principal source of individual growth or as a major contributing component (Lerner et al., 2011; Wachs, 2000). Thus, evidence for heritability and peer influences neither negates nor diminishes equally compelling evidence for effects of parenting. It falls to parents (and other caregivers) to shape the preponderance of children's experiences, and parents directly and indirectly influence children in multiple meaningful ways.

Thinking and research in parenting today are guided by a relational bioecological developmental systems perspective. The size of reported parenting effects reflects the fact that parenting is part of a complex multivariate system that encompasses parents' and children's own capacities and proclivities (intellect, personality), their social relationships (with siblings, peers, teachers, neighbors), and contexts (home, school, neighborhood, socioeconomic class, culture). Within complex developmental systems like that between parent and child, it is unlikely that any single factor can be expected to account for substantial amounts of variation. Parenting effects are also conditional and not absolute (i.e., true for all children under all conditions). More nuanced conceptualizations that incorporate larger numbers of influential variables will explain parenting effects better than minimal ones with fewer variables.



Multiple sources of shared and nonshared environmental influences affect a child's life course.

It would be short-sighted, therefore, to lose perspective on how parenting, even early in life, reverberates across the life span. Automakers and dealers spend nearly \$33 billion a year to influence how people decide what kind of car to purchase. However, consumers are most likely to buy the same brand of car their parents recently chose (Anderson, Kellogg, Langer, & Sallee, 2012). Perceived maternal favoritism in the nuclear family continues to shape the quality of sibling relationships at least into midlife; regardless of which sibling was favored, recollections of favoritism in childhood reduce closeness among siblings, and siblings who have better relationships believe that they were treated equitably by their parents (Suitor et al., 2009). An fMRI study that examined adults' responses to their mothers' and fathers' faces versus the faces of male and female celebrities or strangers revealed that mothers' faces elicited the most activation in core and extended brain regions involved in familiar face processing (Arsalidou, Barbeau, Bayless, & Taylor, 2010). B. A. Shaw, Krause, Chatters, Connell, and Ingersoll-Dayton (2004) analyzed data from a nationally representative sample of 3,000 adults, 25 to 74 years old, from the National Survey of Midlife Development in the United States. They found that parental support during early childhood was a principal factor associated with decreased levels of depressive symptoms and of chronic illness in adulthood. Associations between early parental support and adult health persisted into peoples' 70s. With parenting so demonstratively important, the question to ask should be not whether parents matter, but what makes a good parent.

## THE MULTICAUSAL ORIGINS OF PARENTING

A vital step on the path to fully understanding parenting is to evaluate the many forces that shape it. The origins of individual variation in maternal and paternal caregiving, whether of cognitions or practices, are extremely complex, and it has long been explicitly acknowledged that parenting is multiply determined. Evolution and history; designed and natural ecology; social class and culture; educational, legal, medical, and governmental institutions; formal and informal support networks; family configuration; children themselves; and the biology, intellect, personality, and the idiosyncratic history of the parent work in tandem to construct a parent. Consistent with a relational developmental bioecological orientation (Belsky, 1984; Bronfenbrenner

& Morris, 2006; Farnfield, 2008), this vast array of causes can be grouped roughly according to their proximity to the parent from proximal to distal: (a) intrapersonal and intrapsychic characteristics of parents, (b) actual or perceived characteristics of children, and (c) contextual characteristics. A thorough and thoroughly up-to-date meta-analysis sought to quantitatively synthesize what twin and adoption studies have to say about the etiology of parenting (Klahr & Burt, 2014). Unsurprisingly, this exhaustive attempt to definitively catalogue genetic and environmental sources of parenting identified effects attributable to parent, child, and the environment. Reasons of space constrain a full accounting of all possibilities (see Bornstein, in press, for a more detailed, contemporary, and comprehensive treatment), and so the following exposition is illustrative rather than exhaustive. For heuristic purposes, the ensuing considerations of parent, child, and contextual origins of parenting also treat each factor as a determinant, and each has been investigated as such; however, readers should consider that parenting also affects each factor, and untangling direction of effects is a persistent vexing concern. Qua antecedents, each is moreover thought to influence parenting directly and, indirectly through parenting, children.

### Characteristics of Parents Affect Parenting

Even if most parents face the formidable challenges of parenthood with a degree of psychological naïveté, parents do not meet the task totally unprepared. Biological and psychological characteristics, such as their own genetic endowment, hormones, brain function, age, intellect, personality, and the legacy of their family of origin equip parents to interpret and respond to the kaleidoscopic requirements and pressures of parenting and children.

### Biology and Parenting

Because securing the survival of offspring underlies evolutionary selection, it is likely that specific biological processes evolved in the service of parenting. Expressions of parenting have been shown to reflect genetic endowment, neurohormonal circulation, and central nervous system structure and function. Lytton and Gallagher (2002) and McGuire (2003) introduced and discussed BG research on the heritability of parenting beliefs and behaviors. On the assumption that parenting is itself a phenotype, in the BG view it is therefore a reflection of nature and nurture. Genetic contributions to parenting are conceptualized as evidence of genotype-environment correlations (*rGE*).

Early BG studies showed significant heritability for parenting measures, but the results differed by dimension (McGuire, Segal, & Hersherberger, 2012). Kendler and Baker (2007) meta-analyzed child- and parent-based BG studies of genetic contributions to measures of parenting and found that weighted heritabilities varied for warmth, protectiveness, and control but never exceeded 50%. A succeeding review (Klahr & Burt, 2014) arrived at similar conclusions with respect to heritabilities for different dimensions of parenting in mothers and fathers based on child and parent adoption and twin designs.

Although the literature on possible genetic contributions to parenting is building, it is still new, and the genes involved as well as their processes of action still need identification and unravelling. BG-informed designs implicate genetics but do not (yet) identify molecules; molecular genetic studies, as noted earlier, are challenged to pinpoint and catalogue genetic sources of human phenotypes, such as parenting (although this might be changing: see Bakermans-Kranenburg & van IJzendoorn, 2008; Burkhouse, Gibb, Coles, Knopik, & McGeary, 2011; S. S. Lee et al., 2010; Mileva-Seitz et al., 2011; van IJzendoorn, Bakermans-Kranenburg, & Mesman, 2008). For example, the dopamine (DA) system is an important biological regulator of mothering (Champagne et al., 2004). Indirect evidence has pointed to involvement of the DA system in human mothering; fMRI studies, exposing mothers to infant stimuli, found brain activity patterns that coincide with regions of the mesocorticolimbic DA system (Barrett & Fleming, 2011). Mileva-Seitz et al. (2012) studied genetic variation in both *DRD1* and *DRD2* genes in a community sample of mothers in relation to maternal behaviors during a mother-infant interaction at 6 months postpartum. Two *DRD1* single-nucleotide polymorphisms were associated with maternal orienting away from the infant, and two *DRD2* SNPs were associated with maternal infant-directed vocalizing. As to how genes might manifest in parenting, it is possible they do so through hormones implicated in childbearing and child rearing or because they contribute to the mental and emotional composition of the parent (both of these determinants of parenting are discussed below).

Many reproductive neurocrines, OT, AVP, and PRL, are at least homologous in females and males (Bales, 2014; Corter & Fleming, 2002); estradiol plays a role in regulating maternal behaviors in female animals, and the conversion of testosterone (T) into estradiol is involved in regulating paternal behavior in male animals (Trainor & Marler, 2001, 2002). For example, OT is consistently

implicated in attachment and positive parenting in different species from rat (Champagne, Diorio, Sharma, & Meaney, 2001) to monkey (Maestripieri, Hoffman, Anderson, Carter, & Higley, 2009) to human (Feldman, Gordon, & Zagoory-Sharon, 2011). Feldman et al. (2012) assayed OT from adults who were also genotyped for oxytocin receptor (*OXTR*) and *CD38* risk alleles associated with social dysfunction (*CD38* is an ectoenzyme that mediates the release of brain OT). Parent-infant interactions were microcoded for touch and gaze synchrony, and participants reported on parental care in childhood. Reduced plasma OT and both *OXTR* and *CD38* risk alleles were related to less parental touch, and parents reporting greater parental care showed higher plasma OT, low-risk *CD38* alleles, and more touch, suggesting that peripheral and genetic markers of the extended OT pathway might underpin core behaviors associated with human parenting. In one extension of this work, the same research team observed associations between baseline OT levels in mothers and fathers and different parenting behaviors (engagement, affect synchrony, and communication). OT revealed differential associations with sexually dimorphic patterns of parental behavior discussed earlier: Mothers' baseline OT levels were positively correlated with affectionate but not stimulatory contact, whereas fathers' baseline OT levels were positively correlated with stimulatory but not affectionate contact (Feldman, Gordon, Schneiderman, Weisman, & Zagoory-Sharon, 2010; Feldman et al., 2011).

Increases in PRL levels are implicated in the expression of parenting in females as well as males, and fathers have higher PRL levels than nonfathers (Gettler, McDade, Feranil, & Kuzawa, 2012); AVP, and perhaps PRL and T, may constitute endocrinological bases of paternal care (Fernandez-Duque et al., 2009). In men, T is elevated during mate acquisition or conspecific competition but downregulated in parenting (Fleming, Corter, Stallings, & Steiner, 2002; Gettler, McDade, & Kuzawa, 2011): Men with higher T levels report less sympathy in response to an infant cry (Fleming & Li, 2002), and fathers with higher T engage in less caregiving (Alvergne, Faurie, & Raymond, 2009; Kuzawa, Gettler, Muller, McDade, & Feranil, 2009). A large representative study in the Philippines showed that among single nonfathers men with high waking T were more likely to become partnered fathers by the time of follow-up 4.5 years later. Men who became partnered fathers then experienced large declines in waking and evening T, which were significantly greater than declines in single nonfathers (Gettler, McDade, Feranil, & Kuzawa, 2011). Estrogen has been implicated in unique

emotional responses to infant faces (Sprengelmeyer et al., 2009), and increased estrogen in fathers is associated with more paternal activity after the baby is born (Fleming et al., 2002).

Virgin female and male rats rarely exhibit parental responses, suggesting that the changes that accompany reproductive experience prime the brain to be sensitive to a new and unique set of stimuli (Lambert & Kinsley, 2012). It is well to remember in considering the possible implications of pregnancy-related hormones, however, that many individuals who do not give birth to children—like fathers, grandparents, in-laws, and adoptive parents—not only parent them but come to love and develop strong emotional bonds with them too (Rilling, 2013).

Just as endocrinology is wrapped up in parenting, so are the structure and function of the brain (Bridges, 2008; Brunton & Russell, 2008). Nonhuman animal studies show functional and morphologic sex differences in neural forebrain circuitry and specific behaviors during nursing and care of offspring (Champagne et al., 2001; Corter & Fleming, 2002; Sheehan & Numan, 2002; Simerly, 2002). Another cresting area of research is the “neuroscience of parenting” (Bornstein, 2013a). Using visual (usually faces) and auditory (usually cries or laughs of own and unfamiliar infants and children), imaging studies from EEG to ERP to MEG to fMRI have begun to divulge neural activation patterns in specific regions of the brain that are associated with select parenting cognitions and practices leading to incipient models of a complex brain network hypothesized to mediate human parenting (Swain, Lorberbaum, Kose, & Strathearn, 2007). Since Bartels and Zeki (2000, 2004), programmatic research with own versus other baby photographs and videos (Bornstein, Arterberry, & Mash, 2013; Leibenluft, Gobbin, Harrison, & Haxby, 2004; Noriuchi, Kikuchi, & Senoo, 2008; Ranote et al., 2004; Strathearn, Li, Fonagy, & Montague, 2008; Swain, Leckman, Mayes, Feldman, & Schultz, 2006) and with cries of own infant versus standard cries versus control noises (de Pisapia et al., 2013; Montoya et al., 2012; Ranote et al., 2004; Venuti et al., 2012) has revealed enhanced activations in regions of mothers’, fathers’, and nonparents’ brains associated with empathy, responsiveness, and emotion recognition and evaluation. First-time mothers activate mirror-neuron regions of the brain more strongly when observing and empathizing with their own compared with unknown infants (Lenzi et al., 2009). Connecting brain activation with cognitions, mothers viewing smiling pictures of their own versus unfamiliar infants yields brain activation that is correlated with pleasant mood ratings

and mothers’ affective responses to their infant (Nitschke et al., 2004). Experience-independent and -dependent neuroplastic alignments of the human brain likely subserve the biological requirements of child care and play critical parts in bonding, in securing offspring survival and well-being, and perhaps in fostering reproductive fitness in subsequent generations (Bornstein, 2013a; P. Kim, Leckman, Mayes, Feldman, et al., 2010; Rilling, 2013).

Papoušek and Papoušek (2002) advanced the notion that some parenting practices are biologically wired in human beings. Intuitive parenting involves responses that are developmentally suited to the age and abilities of the child and that likely have the goal of enhancing child adaptation and development. Parents regularly enact intuitive parenting programs in an unconscious fashion; such programs do not require the time and effort typical of conscious decision making, and, being more rapid and efficient, they utilize less attentional reserve. An example of such intuitive parenting (mentioned earlier) is child-directed speech (Soderstrom, 2007) whose special characteristics vary from adult-directed speech along prosodic, simplicity, redundancy, lexical, and content dimensions. Cross-cultural study attests that child-directed speech is (essentially) universal (Jacobson, Boersma, Fields, & Olson, 1983; Snow, 1977; but see Ratner & Pye, 1984). When communicating with their children, even deaf mothers modify their sign language the way hearing mothers use child-directed speech (Erting, Prezioso, & Hynes, 1994). Indeed, parents find it difficult to resist or modify such intuitive behaviors, even when asked to do so (Trevvarthen, 1979). Additional support for the premise that such interactions with children are intuitive comes from observations that nonparents (males and females) who have little prior experience with children modify their speech as parents do when in the presence of a young child and even when asked to imagine speaking to one (Jacobson et al., 1983). Many parenting cognitions and practices are likewise unconscious, habitual, and possibly automatic, and they are enacted by nonparents and parents alike (Senese et al., 2013).

### *Age and Stage of Life in Parenting*

The contemporary demographics of parturition in the United States indicate that the rate of teenage (15–19 years) motherhood is epidemic (329,772 babies in the United States in 2011; J. A. Martin, Hamilton, Ventura, Osterman, & Matthews, 2013), as approximately one in three girls becomes pregnant by the end of their 19th year. At the same time, increasing numbers of adult women are

delaying conception, extending the age range for pregnancy and birth (J. A. Martin et al., 2013). These demographic trends might be ascribable to several factors that contribute to the decision to postpone childbearing. For example, the aging of the baby boom generation translates into greater absolute numbers of women in their late 30s and 40s than in previous decades, which is compounded by delayed marriage, the pursuit of advanced education, careerism, and high rates of divorce. In addition, advances in birth control have made it possible to delay becoming pregnant, and advances in assisted reproductive technologies (ART; such as IVF) have made it possible for older women to become pregnant and parent (Ganong et al., Chapter 4, this *Handbook*, this volume; Golombok, 2002, 2013).

These demographics, in turn, raise questions about effects that may obtain among parent age or stage of life, parenting, and child development. The psychosocial impacts of early childbirth are fairly well established. Adolescent mothers experience more pregnancy and delivery problems, birth less healthy babies, express less desirable and realistic childrearing cognitions, and parent using less favorable practices than do adult mothers (Berlin, Brady-Smith, & Brooks-Gunn, 2002; Bornstein & Putnick, 2007; Bornstein, Putnick, Suwalsky, & Gini, 2006; Demers, Bernier, Tarabulsky, & Provost, 2010; Moore & Brooks-Gunn, 2002; Pomerleau, Scuccimarri, & Malcuit, 2003). Not inconsequentially, young maternal age at parturition uniquely predicts pervasive educational and psychosocial outcomes in children—from reduced chances of graduating from high school to enhanced chances of becoming a teen mother (for girls) or being incarcerated (for boys; National Campaign to Prevent Teen and Unplanned Pregnancy, 2013). At the opposite pole of the parent age continuum, a 35-year-old woman has a 1 in 400 chance of conceiving a child with Down syndrome, and this likelihood increases to 1 in 110 by age 40 and then to 1 in 35 by age 45 (National Down Syndrome Society, 2012). Tending and rearing children are physically challenging, and “gerontological primiparas” may command fading physical capacities to meet those demands (Mirowsky, 2002). Fathers’ age matters as well: A monotonic association obtains between advancing paternal age and risk of ASD in children (Reichenberg et al., 2006), and a study of genome-wide mutation rates by sequencing the entire genomes of a sample of Icelandic parent-offspring trios revealed that the diversity in mutation rate of single nucleotide polymorphisms is dominated by the age of the father at a child’s conception, implicating increases of about two mutations per year (Kong et al., 2012). However,

older mothers are also more likely to adhere to good diets, gain weight appropriately during pregnancy, and begin prenatal care in the first trimester of pregnancy, and they are less likely to smoke. Age is often conceived of as a marker for maturity, perspective, and patience; older adult mothers possess experience and information their younger counterparts do not, and they may feel psychologically ready to assume responsibilities of child rearing. Garrett, Ferron, Ng’andu, Bryant, and Harbin (1994) learned that an especially important factor in mothers’ readiness to be a parent was her maturity as indexed by her age at childbirth.

These age-related factors apply to becoming a parent. Others apply to being a parent. Parents age as their children do, and they face unique developmental needs along the parentway. Parents may be 40 or older when their first child enters adolescence, and parents at midlife encounter their own challenges, for example providing significant support to an emerging adult (as nearly one-in-three parents do now; K. Parker & Patten, 2013) even as they care for their own aging parents (Bornstein, Jager, & Steinberg, 2012).

It was once standard to believe that optimal childbearing takes place between about 20 and about 30 years of age (Rindfuss & Bumpass, 1978), and Rossi (1980) proposed a “timing-of-events” model that suggested that socially off-time childbearing results in a raft of curvilinear relations between age and parenting cognitions and practices. Thus, having a child when very young or very old might represent “off-time” (versus “on-time”) variations in the progression through this key phase in the life cycle. The association between parenting stress and age appears to be curvilinear, with teenage and older mothers tending to report higher levels of parenting stress compared to mothers in their 20s and early 30s (Östberg & Hagekull, 2000). The age at which a parent has a child shapes the child’s cognition and even risk for mental illness, and it appears that this risk is curvilinear as well, with both age extremes associated with decreased intelligence and increased prevalence of some neuropsychiatric disorders. Associations between parental age and child gray matter volume, adjusting for offspring age, gender, intelligence, and parental social class, show  $\cap$ -relations (P. Shaw et al., 2012).

Whether and how chronological parent age relates to parenting cognitions or practices or child development appears to depend on specifics, including the assessment of parent and outcome in child (Bornstein & Putnick, 2007; Bornstein et al., 2006). For example, mothers of all ages possess implicit beliefs (Holden & Buck, 2002), and mothers of all ages engage equally in child-directed speech (Papoušek & Bornstein, 1992). However, the more



mature, experienced, and well-to-do mothers are, all factors attendant to age, the more appropriate and optimal their parenting cognitions and practices are likely to be (Bornstein et al., 2012; Demers et al., 2010).

Of course, age is a “social address” (Wachs, Chapter 21, this *Handbook*, this volume), and at present, there is no comprehensive theory of women’s adult psychosocial development. For this reason age usually stands as a reasonable proxy. More proximal intrapersonal factors likely play the meaningful roles in parenting, and it is possible to identify some critical developmental phenomena that would help to mark mature caregiving. For example, age-related developing executive functions (discussed below) coordinate cognitive and metacognitive processes through monitoring and controlling the use of knowledge and strategies (Barkley, 2012; Yeager & Yeager, 2013).

### ***Cognitions in Parenting***

Parents’ attentiveness, intelligence, mental functioning, and (as we see later) even memories of their own childhood help to create a larger cognitive framework of parenting. German policewomen report enhanced vigilance following the birth of their first child (Fullgrabe, 2002), and women’s assessed attentional processing of infant emotion during pregnancy influences their relationships with their infant (Pearson, Lightman, & Evans, 2011). Mothers with better attention and working memory are more sensitive and prompt when responding to their infants (Gonzalez, Jenkins, Steiner, & Fleming, in press). Using data from the Massachusetts site of the NICHD Study of Early Child Care and Youth Development, Mulvaney, McCartney, Bub, and Marshall (2006) found that mothers’ verbal intelligence predicted the effectiveness of their scaffolding collaborations with children (which in turn uniquely predicted cognitive capabilities of the children). Already discussed, parents’ belief systems relate to certain behavior choices and help to determine how much time, effort, and energy to expend in parenting. For example, perceived self-efficacy is likely to affect parenting positively because parents who feel competent are reinforced and thus motivated to engage in further interactions with their children, which in turn provides parents with additional opportunities to read their children’s signals fully, interpret them correctly, and respond appropriately. Culturally distinct parenting beliefs provide parents with a framework for interpreting their children’s behaviors, guiding parents’ interactions with their children, and determining the activities and opportunities that parents supply for their children’s development. Ethnographic interviews of mothers with infants between

the ages of 2 and 18 months disclose that some mothers avoid using physical punishment with infants because they believe that infants are not able to clearly understand right and wrong, whereas other mothers believe that infants can misbehave intentionally and need to be punished to stop their bad behavior and learn to respect the mother’s authority. Subsequent quantitative analyses reveal that mothers who express concerns about bad behavior and spoiling interact less positively with their infants during free-play interactions (Burchinal, Skinner, & Reznick, 2010).

Normally, executive functions (defined above) include self-regulation, sequencing, flexibility, response inhibition, planning, and organizing behavior. The orderly approach to problems, maintenance of problem solving sets for future goals, flexibility and effectiveness of verbal self-regulation, skillful use of strategy, and behaviors that alter the likelihood of later events are all executive functions—and nicely describe many requirements of parenting. In short, executive functions exert powerful influences on social behavior, and immaturity or impairment of executive functions can lead to demanding and self-centered behavior, lack of social tact and restraint, impulsive speech and actions, disinhibition, and indifference, all of which are hallmarks of dysregulated parenting.

The neuropsychological underpinnings of executive functions are usually assigned to the prefrontal cortex and its extended networks (Pennington, Bennetto, McAleer, & Roberts, 1996). Notably, individuals with localized prefrontal injury display poor parenting (Eslinger, Grattan, Damasio, & Damasio, 1992). Consider patient DT, who:

proved unable to anticipate and meet her child’s needs, such as planning meals, changing clothing, and providing nurturance and comfort.... Her performance [was] erratic, impulsive, and marked by poor follow through on required tasks, failure to learn from mistakes, and very negative reactions to criticism.... [She had] very limited capacity for empathic understanding, inadequate identity development, difficulties in vocational adjustment, and a concrete level of moral reasoning. (Grattan & Eslinger, 1992, p. 185)

DT shows how the want of executive functions profoundly undermines parenting in an individual who otherwise possesses normal motor and sensory functions and broadly normal intellect, perception, language, and memory. To this point, it is important to note that the prefrontal cortex shows a prolonged course of development, with changes in synaptic density detectable even into the mid-20s (P. Shaw et al., 2006) and so could very well underlie the challenges commonly associated with



adolescent parenting. Younger mothers score lower than older mothers on a construct called “cognitive readiness to parent” (aggregated parenting knowledge, attitudes, and style), and cognitive readiness to parent predicts parenting during infancy (Whitman, Borkowski, Keogh, & Weed, 2001) and attachment security at 1 year and accounts for relations between early maternal interactions and 1-year attachment (Lounds, Borkowski, Whitman, Maxwell, & Weed, 2005).

Civitas Initiative et al. (2000) conducted a survey of 3,000 adults regarding what parents know about child development. Specific areas of misinformation included expectations of young children at different ages and stages, and spoiling and spanking. A report from the Commonwealth Fund subsequently indicated that mothers want simple and easily accessible materials about their child's development and about easing the pressures of child rearing (Kannel & Perry, 2001). Mothers' specific knowledge of childrearing and child development explains variations in their emotional relationships with their young children (Bornstein, Jager, et al., 2012). Parents' knowledge guides health-related decisions, as the SIDS knowledge-versus-compliance example (recounted earlier) importantly illustrates (Centers for Disease Control and Prevention, 2014b). Parenting cultural knowledge is often conceptualized as naive theories about how children progress toward idealized social roles, what influences their development, how skills are acquired, and the parts of different adults and environments in the developmental process (Keller et al., 2006; Rosenthal & Roer-Strier, 2001).

### ***Personality in Parenting***

Personality has a significant part to play in parenting: “One cannot take the ‘person’ out of the parent” (Vondra, Sysko, & Belsky, 2005, p. 2). This idea has been acknowledged formally at least since Sigmund and Anna Freud and was continued by Winnicott, Spitz, and others in the psychoanalytic psychodynamic tradition (described earlier). Contemporary views derived from personality psychology assert that some parenting cognitions or practices should reflect general and stable personality characteristics (Belsky & Barends, 2002). Bronfenbrenner and Morris (2006) opined that personality factors constitute person “force characteristics” likely to influence children's development because personality affects parenting directly and because it shapes other social contextual factors that influence parenting, including spouse selection, marital relationships, occupational experiences, and friendships and social supports. Two general orientations have guided theory and

research linking personality to parenting: One concerns the five factors that identify the composition of normal personality, and the other concerns less typical personality characteristics from anxiety and stress to depression and psychopathology.

Personality has been conceptualized as a profile of five broad-band factors (the “Big Five”) each of which has lower-level facets (McAdams & Pals, 2006), and Allik and McCrae (2004) maintained that this nomothetic trait structure provides a comprehensive map of personality and may be “universal” (McCrae et al., 2005). *Openness to experience* reflects a tendency to have a broad perspective and to approach life in intelligent, creative, philosophical, and inquisitive ways. *Neuroticism* reflects a proneness to psychological distress, unrealistic ideas, excessive cravings or urges, maladaptive coping responses, and a perturbable, insecure, and vulnerable orientation to life. *Extraversion* reflects the quantity and intensity of interpersonal interaction, activity level, need for stimulation, capacity for joy, control, and assertiveness. *Agreeableness* reflects an interpersonal orientation in feelings, thoughts, and actions along a continuum from compassion to antagonism, the high end of which is characterized as cooperative, trusting, and warm. *Conscientiousness* reflects the extent to which a person is well-organized, responsible, decisive, dependable, hardworking, and even ambitious.

Prinz et al. (2009) meta-analyzed associations between the Big Five personality factors and parenting. Results tend to show small effects moderated by age, study design, and so forth; many personality features are associated with both positive and negative parenting; and most studies focus on mothers (and fewer on fathers; Cabrera, Fitzgerald, Bradley, & Roggman, 2007). For example, mothers high in extraversion and conscientiousness are more likely to display nurturance and support (Clark, Kochanska, & Ready, 2000; Smith et al., 2007), but extraversion has associations with internalizing, and extraverted mothers are also more controlling (Clark et al., 2000). Conscientious mothers provide more structure and use less forceful disciplinary styles than less conscientious mothers, however conscientiousness is also associated with restrictive and over-controlling childrearing (Clark et al., 2000; Neitzel & Stright, 2004; Verhoeven et al., 2007). Along with Kotov, Gamez, Smith, and Watson (2010), other meta-analyses have reported that conscientiousness shows associations with both internalizing and externalizing psychopathology (Decuyper, De Pauw, De Fruyt, De Bolle, & De Clercq, 2009; Ruiz, Pincus, & Schinka, 2008). Agreeable mothers express high levels of positive affect, support, and warmth

with their children, are more sensitive and responsive to their children's needs, and are less likely to be affectively negative, uninvolved, and over-reactive (De Haan et al., 2009; Smith et al., 2007); however, agreeableness has associations with externalizing (Kotov et al., 2010; Ruiz et al., 2008). Mothers who are high in neuroticism display high levels of negative affectivity toward their children, are less responsive to their children's needs, engage in more physical and verbal power assertion, and are less encouraging of their children's autonomy (Clark et al., 2000). Kotov et al. (2010) also found that neuroticism shows small to moderate associations with internalizing and externalizing psychopathology (Decuyper et al., 2009; Ruiz et al., 2008) as neuroticism is a robust predictor of negativity/rejection toward children, and mothers high in the personality characteristics of negative emotionality and disagreeableness are rated by observers as being more rejecting of their children (Clark et al., 2000). In fathers too, high levels of neuroticism indicate depression within the first year of their baby's life (Matthey, Barnett, Kavanaugh, & Howie, 2001).

Only a few studies have assessed all of the five personality factors simultaneously in relation to parenting thereby allowing evaluation of the unique role of each. In one, factor analysis of a personality inventory completed by a community sample of European American mothers of first-born 20-month-olds replicated extraction of the Five-Factor model of personality. Mothers also responded to measures of parenting cognitions (knowledge, self-perceptions, and reports about behavior) and were observed in interaction with their children to yield measures of parenting practices (language, sensitivity, affection, and play). Controlling for sociodemographic characteristics, the five personality factors (as variables and in patterns as clusters) related differently to diverse parenting cognitions and practices (Bornstein, Hahn, & Haynes, 2011). In a parallel cross-cultural study, mothers of firstborn 20-month-olds from seven countries (Argentina, Belgium, Israel, Italy, Japan, South Korea, and the United States) completed all of the same procedures (Bornstein et al., 2007). The Five-Factor structure was extracted when the cross-cultural data were analyzed, and again the Big Five were found to relate differently to diverse aspects of parenting. C. L. Smith et al. (2007) examined longitudinal relations among maternal personality, emotional expressions, and parenting (sensitivity and intrusiveness): Conscientiousness and agreeableness were positively associated with observed positive emotional expressions at T1, and agreeableness, openness to experience, and extraversion at T1 were

positively related to positive emotional expressions at T2. T1 and T2 maternal positive emotional expressions, in turn, were associated with more sensitive behavior observed at T3. In addition to first-order associations between maternal personality and maternal parenting, other factors (e.g., emotional expressiveness) may constitute possible pathways for explaining second-order relations between personality and parenting. Maternal personality is often neglected in parenting research, but appears to be a significant factor in normative parenting, child development, and family process.

Other features of normal personality favorable to good parenting likely include empathic awareness, predictability, nonintrusiveness, and emotional availability; lack of self-centeredness and adaptability might also be especially pertinent to parenting. Adult adaptability is likely vital in the first few months, when infants' activities appear unpredictable and their behaviors undifferentiated, and self-centered parents may be less likely to put children's needs before their own; so women who are more pre-occupied with themselves, as measured by physical and sexual concerns, show less effective parenting in the first postpartum year.

Some states of mind, still in the normal range but troubling, are regularly associated with poor parenting (Whisman & Baucom, 2012; Zahn-Waxler, Duggal, & Gruber, 2002). Stress, in its many forms, has a rich history of untoward influence on multiple aspects of well-being in parenting (Deater-Deckard, 2004). Stress as in coping with daily hassles predicts less maternal positivity (Crnic & Low, 2002); depressed mothers experience more parenting stress (Coyl, Roggman, & Newman, 2002); and stress disrupts the parent-child relationship (Ciciolla, Crnic, & West, 2012; Crnic, Gaze, & Hoffman, 2005). Parenting stress affects children as well: Parenting stress is related to specific parenting behaviors, which are, in turn, related to specific domains of self-concept in adolescence (Putnick et al., 2008). Mothers and fathers report increased parenting stress across their child's transition to adolescence, driven by parent-child interactions rather than qualities of the parent or the child per se (Putnick et al., 2010). Abidin (1992) conceptualized parenting stress as resulting from many different relationships and contexts. Parents who are more stressed in the parenting role are more likely to be categorized as authoritarian (Tan, Camras, Deng, Zhang, & Lu, 2012), whereas parents who report low levels of stress are more likely to be categorized as authoritative (Woolfson & Grant, 2006). More stressed parents are more likely to resort to harsh discipline (Anjum & Malik,

2010; Fang, Wang, & Xing, 2012; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000) and under chronically high conditions even child abuse (Taylor, Guterman, Lee, & Rathouz, 2009), whereas less stressed parenting has been linked with better parent-adolescent communication (Joshi & Gutierrez, 2006). Prospective studies reveal that the effects of stress begin surprisingly early: Stress during late pregnancy predicts child birth weight and is associated with increased emotional and antisocial problems in young children, even when controlling for important confounds (Rice et al., 2007; Swanson & Wadhwa, 2008; Talge et al., 2007). Some child factors, such as low birthweight, prematurity, illness, and ASD, are associated with parenting stress (Kuhn & Carter, 2006; Saigal & Doyle, 2008), and (unsurprisingly) the more severe the child's symptoms the greater the degree of parenting stress (Williford, Calkins, & Keane, 2007). Stability of stress (Lecavalier, Leone, & Wiltz, 2006; Putnick et al., 2010) likely maintains these adverse influences (Östberg, Hagekull, & Hagelin, 2007).

Whereas psychological well-being is associated with parenting competence (Fujiwara, Okuyama, & Izumi, 2012), psychological distress (anxious or depressive symptomatology short of outright psychopathology) appears to undermine parenting. Maternal anxiety predicts self-reported lower warmth toward children (Drake & Ginsburg, 2011), and anxious mothers may be disengaged or intrusive and over-stimulating (Feldman et al., 2009; Kertz, Smith, Chapman, & Woodruff-Borden, 2008; for a meta-analysis see van der Bruggen, Stams, & Bogels, 2008). Children of mothers with high levels of anxiety during mid to late pregnancy are more likely to display emotional and disruptive behavior problems (Beesdo-Baum & Knappe, 2012; Huizink, Mulder, & Buitelaar, 2004; O'Connor, Heron, Golding, Glover, & ALSPAC, 2003), even controlling for confounds (O'Connor, Heron, Glover, & ALSPAC, 2002; van den Bergh & Marcoen, 2004), and older children of mothers with generalized anxiety disorder exhibit flatter emotional tone and are more withdrawn (Stein et al., 2012).

Whether fleeting, as in response to the birth of the baby or economic circumstances, or chronic, depression adversely affects parenting (Field, 2010; Morse, Buist, & Durkin, 2000; Murray, Halligan, & Cooper, 2010; Zahn-Waxler et al., 2002). Epidemiologically, postnatal depression is surprisingly common with a prevalence of as much as 15% (Gavin et al., 2005). Depressed mothers fail to experience—and convey to their children—much happiness with life. Depression's associated mood disturbance, worry, and rumination compromise mothers'

ability to attend, diminish responsiveness, and discoordinate interactions with infants and children (Manian & Bornstein, 2009; Murray et al., 2010; Pearson et al., 2012; Stein et al., 2012; Tronick & Reck, 2009), and depressed parenting is thought to have short- as well as long-term adverse consequences for children (Dix & Meunier, 2009). Mothers who present with depression likely show negative affect and beliefs, apathy and lack of energy, and so decreased and compromised engagement with their children (Campbell, Matestic, von Stauffenberg, Mohan, & Kirchner, 2007; Kertz et al., 2008; Mertesacker, Bade, Haverkock, & Pauli-Pott, 2004; van Doesum, Hosman, Riksen-Walraven, & Hoefnagels, 2007). Meta-analysis points to small, significant associations between maternal depression and negative (coercive, intrusive) and disengaged (withdrawn, uninvolved) parenting (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). Although maternal postpartum depression has been the major focus of study, depression's effects are not exclusive to mothers. Prenatal and postpartum depression manifests in about 10% of men (Paulson & Bazemore, 2010), and postpartum paternal depression is predicted by maternal depression (Beck, 2001; Goodman, 2004; Wee, Skouteris, Pier, Richardson, & Milgrom, 2011). Happily, most cases of postpartum depression remit; unhappily, treatment of depression is less than successful in repairing parent-child relationships (Forman et al., 2007).

Psychopathology, such as mental illness, phobias, substance abuse, and antisocial behavior, seriously impairs thinking, affect, and behavior, and consequently parenting cognitions and practices. Vesga-López et al. (2008) estimated prevalence of postpartum psychopathologies to range from 12% for substance use to 15% for mood disorder. Fewer studies of such outright psychopathologies and parenting populate the literature (Berg-Nielsen, Vikan, & Dahl, 2002). However, mothers diagnosed with major psychopathologies display detached parenting, spend less time with their children, show less affection, and provide less structure (Brook, Brook, Ning, Whiteman, & Finch, 2006; Champion et al., 2009; Gerdes et al., 2007; Suchman & DeCoste, 2012); meta-analysis indicates that maternal psychopathology is a likely antecedent of infant disorganized attachment (Madigan et al., 2006); and mothers who engage in antisocial behavior are less likely to employ optimal parenting practices (Jaffee, Belsky, Harrington, Caspi, & Moffitt, 2006) and more likely to demonstrate hostility toward children (Bosquet & Egeland, 2000) or even abuse them physically (Kim-Cohen, Caspi, Rutter, Tomás, & Moffitt, 2006; Kim-Cohen, Rabbitt, Henry, & Gold, 2012).

### *Intergenerational Transmission of Parenting*

Complete maternal deprivation in rats, through artificial rearing (AR), produces deficits in maternal behavior of the offspring. In adulthood, AR mothers engage in poorer parenting (fewer pup retrievals and less pup licking, but more nonmaternal tail chasing, digging, and hanging/climbing). Daughters of AR and maternally reared (MR) mothers that were observed after the birth of their own litters in adulthood showed patterns of parenting behavior that mimicked patterns shown by their respective mothers (Gonzalez, Lovic, Ward, Wainwright, & Fleming, 2001). Moreover, AR mothers show the same deficits in maternal behavior towards MR foster pups as they do with their own pups (Palombo, Nowoslawski, & Fleming, 2010). Thus, maternal behavior deficits in dams that had been raised in isolation are primarily attributable to the direct effects of early experience on mechanisms regulating their maternal behavior and not to offspring effects. Finally, maternal deprivation impairs performance on social learning tasks, but not spatial learning. AR animals make no distinction between a new and a previously presented juvenile conspecific, and AR animals respond less rapidly than MR animals at tests for maternal behavior 2 weeks after postpartum experience with pups (Lévy, Melo, Galef, Madden, & Fleming, 2003).

Through intergenerational transmission, via interlocked genetic and experiential pathways, purposefully or unintentionally, one generation (G1) appears to influence the parenting beliefs and behaviors of the second (G2) that in turn shape child development in the third (G3; see Belsky, Conger, & Capaldi, 2009, and their introduction to the special section of *Developmental Psychology*). Fraiberg, Adelson, and Shapiro (2003) once referred to these influences as “ghosts in the nursery.” Ruoppila (1991) reported significant correlations between grandparental and parental child rearing in a Finnish sample, and Vermulst, de Brock, and van Zutphen (1991) documented similarities in parental functioning across generations in a Dutch sample. Kovan, Chung, and Sroufe (2009) recorded interactions of parents and their 2-year-olds and then waited and recorded interactions of those 2-year-olds as parents of their own 2-year-olds. Even accounting for confounds, a relatively strong correspondence emerged in parenting practices between generations. Various studies now document similarities across generations for harsh parenting (Capaldi, Pears, Patterson, & Owen, 2003; DiLillo & Damashek, 2003) and poor supervision (Smith & Farrington, 2004) as well as for positive (Hofferth, Pleck, & Vesely, 2012;

Thornberry, 2005; Thornberry, Freeman-Gallant, Lizotte, & Krohn, 2003) and constructive parenting (Z. Chen & Kaplan, 2001; Kerr, Capaldi, Pears, & Owen, 2009). More significantly, maritally dissatisfied couples are more likely to have had unhappily married parents (Amato & Booth, 2001); marital violence in the family of origin tends to repeat in the successive generation (Stith et al., 2000); and when parents abuse their children the children are at risk of repeating the pattern as parents with their own children (Cicchetti, Toth, & Maughan, 2000; Newcomb & Locke, 2001; Pears & Capaldi, 2001). Thus, physically aggressive and punitive techniques in G1 toward G2 predict similar behaviors in G2 toward G3 and antisocial behavior in G3 (Murphy-Cowan & Stringer, 1999). The emerging literature is clearly suggestive that parenting children can exert long-term direct effects on those children parenting their own children. Moreover, the roots of such effects appear to penetrate deeply: Perceived quality of maternal care in childhood is associated with brain structure and functional responses to salient infant stimuli among human mothers in the first postpartum month. That is, mothers who reported higher maternal care in childhood showed larger gray matter volumes, and in response to infant cries these mothers exhibited higher activations, vis-à-vis mothers reporting lower maternal care (Kim, Leckman, Mayes, Newman, et al., 2010).

The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) assesses an adult’s internal working model of his or her own relationships with his or her parents. Strong predictive links have emerged between the G2 mother’s AAI classification and the G3 child’s attachment with the mother (P. K. Smith & Drew, 2002). G2 mothers who report having secure and realistic perceptions of their attachments to their G1 mothers, for example, are themselves more likely to behave sensitively with their G3 children and have securely attached G3 children (Cummings & Cummings, 2002). Van IJzendoorn (1995) reviewed AAI studies and reported very high concordance between the parent’s autonomous/nonautonomous classification and a child’s secure/insecure classification in Ainsworth’s Strange Situation. Indeed, some researchers claim that G2 maternal attachment to her primary G1 caregiver is a better predictor of her parenting skills than G2 representations of her G3 child or experiences directly with the G3 child (Biringen, Matheny, Bretherton, Renouf, & Sherman, 2000).

Just collecting two- or three-generation data is formidable, so it is to be expected at this stage that the field is far from settled on the mediational processes



by which parenting transmits intergenerationally. Both genetic and experiential pathways of various flavors have been proffered. For example, a parent's experiences with and memories of his or her own parents may reverberate in his or her parenting via direct (possibly ascribable to G2's observational learning of G1 parenting) or indirect (experiencing G1 parenting as a child might shape interactive behaviors with others, including one's own children) pathways (Campbell & Gillmore, 2007; Capaldi et al., 2003; van IJzendoorn, 1992). Parents draw on the legacy of their families of origin for models of parenting, often emulating the same patterns of parenting and couple interaction they were exposed to as children, so mothers' positive memories of their family of origin's coparenting relationship are associated with their own supportive stance (Stright & Bales, 2003).

In brief, many biological and psychosocial factors in the parent help to shape parenting cognitions and practices. Others not addressed here, such as the parent's birth order or physical health (Houck, Rodrigue, & Lobato, 2007) do so too. To parent well, parents' own needs must be met: When women are inadequately nourished, for example, their health and social development may be compromised, and their abilities to bear and rear healthy children are jeopardized.

### Characteristics of Children Affect Parenting

Phonemes (the meaningful sound units of speech) are constructed of subelements (distinctive features). Jakobson (1941/1969) observed that the order of appearance of these distinctive vocal features in a Babel of languages including English, Swedish, and Japanese may be relatively fixed in babies. Infants first produce front oral-cavity consonants (/m/, /p/) and mid- to back-vowels (/a/). Consonant-vowel combinations of these pairs are therefore frequently the earliest phonemes that appear in infant vocalizations. Notably, two of these early and frequently appearing pairs, viz. /ma/ and /pa/, acquire particular meaning quite early in life. Murdock (1959) tallied the use of front-consonant/back-vowel phonemes as parental descriptors in 1,072 languages and compared their frequency with other combinations (e.g., front-consonant/front-vowel, back-consonant/back-vowel, etc.) Fifty-seven percent of languages use front-consonants/back-vowels for parental kin terms. That is, adults appear to adopt infants' first utterances as terms for their parenting role.

Thinking about parent-child relationships naturally highlights children's parents as agents of their socialization,

and there is ample evidence, especially in the early years, that, between parents and children, children have little agency and parents exert more sway (Kochanska & Aksan, 2004; Maccoby, 1992; Vygotsky, 1978). However, as just illustrated in regard to the signal impact of infant utterances, to a considerable degree parenting is a two-way street, and children actively select, modify, interpret, and create their own environments, including their parenting (Bell, 1968; Scarr & Kidd, 1983).

From the start, the birth of a child stirs the emotions and rivets the attention of adults. By their very coming into existence, children alter the sleeping, eating, and working habits of their parents; and they change who parents are and how parents define themselves. In point of fact, parent and child activities are characterized by intricate patterns of transactions and attunements (Bornstein, 2009, 2013a). Infants cry to be fed and changed, and when they wake, they let parents know they are ready to play and to learn; through social referencing and attachment relationships, infants and young children regularly use others as agents. Many parenting initiatives are proactive; very often, however, children's parents behave reactively. When, recall, Anderson et al. (1986) experimentally paired conduct-disordered boys with mothers of normal boys, the mothers behaved negatively. For some, adolescent problem behaviors may more powerfully determine parenting practices than parenting practices provoke subsequent adolescent problem behaviors (Huh, Tristan, Wade, & Stice, 2006).

In effect, many subtle as well as not so subtle biological and physical, psychological and social characteristics of children influence parenting (Hodapp & Ly, 2005; Karraker & Coleman, 2005). Parents and their children continuously interact with one another over time to mutually construct parenthood (as well as childhood). Some "child effects" are universal and common to all children; others are unique to a particular child or circumstance. For example, certain shared physical features of children likely affect parents everywhere, perhaps in similar ways. By 18 to 20 weeks of gestation in their first pregnancy (earlier in repeated pregnancies), fetuses are felt to move in utero ("quickening"), a significant marker in the lives and psyches of the child's parents (Cunningham et al., 2010). Newborns have large heads dominated by disproportionately large foreheads, widely spaced sizable eyes, small snub noses, exaggeratedly round faces, and small chins. The ethologist Konrad Lorenz (1935/1970) hypothesized that these physiognomic *Kindchenschema* incite adults to express species-general nurturant reactions. Human infant faces elicit activity in select brain regions associated with empathy, reward,



and responsiveness (such as the orbitofrontal cortex, OFC; Caria et al., 2012; Glocker, Langleben, Ruparel, Loughhead, Valdez, et al., 2009), and these responses in adults are rapid (detectable after only ~130 ms; Kringelbach et al., 2008), affectively positive (Parsons, Young, Kumari, Stein, & Kringelbach, 2011; Senese et al., 2013), and motivating of caregiving and even willingness to adopt (Glocker, Langleben, Ruparel, Loughhead, Gur, et al., 2009; Volk & Quinsey, 2002). From the moment of birth, certain baby signals effectively influence parenting: Infant crying alters hormonal circulation, heart rate, blood pressure, skin conductance, and attention, and arouses adults to approach and soothe (Konner, 2010; Soltis, 2004; van Anders, Tolman, & Volling, 2012), and infant smiles encourage proximity and trigger brain areas associated with reward and motivation (Eibl-Eibesfeldt, 1989; Konner, 1991; Mascaro et al., 2013). As to be expected in an alloparental species such as ours (Hrdy, 2009), many of the same parental nervous and behavioral systems that are galvanized in mothers are in fathers (Kuo, Carp, Light, & Grewen, 2012; Wittfoth-Schardt et al., 2012) and in nonparents (Caria et al., 2012; Glocker, Langleben, Ruparel, Loughhead, Valdez, et al., 2009).

Other structural characteristics of children affect parenting and the quality of parent-child interactions; child health status, gender, and developmental age are three significant examples. Regarding the first, child health, for example, preterm children often have difficulty regulating engagements with parents, as evidenced in increased gaze aversion, decreased play, and lower levels of joint attention. In compensation, mothers of preterms tend to be more active and directive (Goldberg & DiVitto, 2002). Infant faces may elicit solicitude, but the face of an infant with a cleft lip, a minor change to one facial feature, disrupts activity in the OFC (Parsons et al., 2013) and parenting (Murray et al., 2008).

A second structural characteristic is gender. Although there is evidence that parenting girls and boys is surprisingly similar in many ways (Hyde, 2014; Leaper, 2002), child gender broadly organizes parents' descriptions, impressions, and expectations of children from the start of life (Bornstein, 2013c): Newborn nurseries are outfitted with gender-appropriate blankets, accessories, and so forth; baby showers are dutifully respectful of the child's gender; and infants are fastidiously dressed in gender-stereotyped clothing. Parents have been reported to purchase gender-typed toys for their children within a few months of the child's birth—prior to when children could express gender-typed toy preferences themselves—so

just the fact of gender is an active ingredient in parenting (Pomerleau et al., 1990). Parents speak more frequently about emotions with their girls than with their boys, they speak about emotions differently, and differentially reward and punish emotional expression in daughters versus sons (Garside & Klimes-Dougan, 2002). Boys tend to receive less parental oversight and more freedom than girls (Kroneman, Loeber, & Hipwell, 2004). Even when girls and boys may be equivalent by objective assessment, they may be parented differently: recall Mondschein et al. (2000) on mothers' differential estimations of girls' and boys' motor skills; in the temperament domain, mothers respond differently to their "difficult" sons than to their "difficult" daughters (Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). Some investigators have even hypothesized that individual parent-child gendered dyad combinations might betray distinct dynamics: mother-son, mother-daughter, father-son, and father-daughter. For example, Daughters, Gorka, Rutherford, and Mayes (2013) reported that maternal distress tolerance predicts adolescent distress tolerance in daughters, but not sons.

On the third structural characteristic, the age and stage of the child's development dictates plainly many parental beliefs and behaviors. Childhood is change—development involves rapid growth in biological, mental, emotional, and social spheres; understanding, anticipating, and responding to dynamic ontogenetic change continuously challenge parents. Parents need to know about and keep vigilant to all the complications and subtleties associated with their child's development. Not unexpectedly, the sheer frequency with which children are exposed to parent-related actions, objects, and events evolves markedly from infancy to adolescence (Bradley, Corwyn, McAdoo, & García Coll, 2001). For example, mothers and fathers alike show high levels of preoccupation during the first postpartum month that decline by the third postpartum month while their positive thoughts about parenting and the infant reciprocally increase (P. Kim, Mayes, Feldman, Leckman, & Swain, 2013). Mothers of infants in many cultures use affect-laden speech, but as children achieve more sophisticated levels of motor exploration and cognitive comprehension mothers increasingly orient, comment, and prepare children for the world outside the dyad by infusing their speech to children with increasing amounts of information (Bornstein et al., 1992). Parents of preschool children spend more quality time and time in childcare activities than do parents of school-age children (Price, 2008; U.S. Bureau of Labor Statistics, 2013), and parents grant older children greater autonomy than younger children (Leventhal, Dupéré, &

Brooks-Gunn, 2009). Similarly, children's achieving certain milestones, standing upright and walking for example, exhaustively alters the nature and quality of adult caregiving (Campos et al., 2000; Karasik, Tamis-LeMonda, & Adolph, 2014), and the elevation in parent-child conflict is timed to firstborns' transition to adolescence (Shanahan, McHale, Osgood, & Crouter, 2007). With each child rite of passage, moving from "lap child" to "yard child," going to school for the first time, receiving communion or getting bar or bat mitzvahed, driving and dating, attending college, getting married, and all the events in between, parenting changes.

Idiosyncratic characteristics of individual children are equally compelling to parents. Every child is an original, and general developmental functions unfold in the context of wild individual variation. Some individual differences are rooted at deep biological levels. For example, a polymorphism of the *DRD4* gene is associated with disorganized attachment (Gervai et al., 2005; Lakatos et al., 2000, 2002). Among carriers of the 7-repeat *DRD4* allele, there is no relation between quality of maternal communication and infant attachment disorganization; however, a strong relation exists between maternal disrupted communication and attachment disorganization in infant carriers of the *DRD4* 7-repeat genotype. That is, a genetic character in the child moderates the relation between maternal caregiving and infant attachment (Gervai et al., 2007). Similarly, low maternal sensitivity in infancy predicts higher levels of mother-reported externalizing behavior problems at 2 to 3 years of age but only if infants carry the 7-repeat allele of the *DRD4* gene (Bakermans-Kranenburg & van IJzendoorn, 2006). In the Dunedin study, Caspi et al. (2002, 2003) found that the relation between childhood maltreatment and later psychological maladjustment is moderated by genetic factors. The functional polymorphism of the regulatory region of the monoamine oxidase A (*MAOA*) gene moderates the relation between early maltreatment and later antisocial behavior, and a regulatory polymorphism of the serotonin transporter (*5-HTT*) gene moderates the effect of early maltreatment on adult depression (see also Foley et al., 2004; Kaufman et al., 2004; Kim-Cohen, Caspi, Taylor, et al., 2006).

Other surface domains of development show equally impressive variation and exercise strong psychological and behavioral impressions on parents. Children's cognitive development at age 2 predicts their mothers' language at age 3, controlling for maternal language at 2 (Song et al., 2013). Child temperament and behavior engender maternal feelings of competence (Dixon & Smith, 2003; Kiff,

Lengua, & Zalewski, 2011; Putnam et al., 2002) and elicit consequent parenting (Anderson et al., 1986; Larzelere, 2000), just as children's information disclosure affects parental monitoring (Kerr & Stattin, 2000; Stattin & Kerr, 2000). Children's problem behaviors unnerve parents: For example, infants' cry-fuss/sleep difficulties contribute to maternal depression and stress, and repeated problems have a greater impact than antecedent or concurrent ones (St. James-Roberts, 2007). Goldberg (1977) taxonomized three salient child characteristics that likely affect parents: (1) *responsiveness*, the extent and quality of child reactivity to stimulation; (2) *readability*, the definitiveness of child behavioral signals; and (3) *predictability*, the degree to which child behaviors can be reliably anticipated. Each child varies on each dimension, and each possesses his or her unique profile of them all, and in consequence how they will influence how parents treat the child. An "easily read" child produces unambiguous cues that allow parents to recognize the child's state of arousal quickly, interpret signals promptly, and thus respond contingently.

Normal development may be nonlinear in nature, stalling sometimes, or even regressing temporarily (Bever, 1982; C. C. Harris, 1983; Strauss & Stavey, 1982). Parenting a child is thus akin to trying to judge a moving target, the ever-changing child developing in fits and starts at his or her own pace. A major challenge parents face is that, at base, they are constantly trying to divine what is inside their children's heads, what they want, what they know, how they feel, and what children will do next vis-à-vis the things and people around them. Thus, parents seem constantly in search of patterns, often inferring them on the basis of single transient events or child expressions.

In brief, child effects are pervasive and thoroughgoing and potent in parenting. In the presence of children, most adults will curb their language and modify their behavior, and to set examples they will eschew the immoral and illegal and strive to heed the better angels of their nature. Moreover, a transactional or reciprocal effects model asserts that parenting affects child growth and development but that children also affect parenting. This relational developmental systems view prevails in parenting theory and research.

### Contextual Characteristics Affect Parenting

In addition to parent and child characteristics, social and societal factors, such as the parent's family structure, support networks, socioeconomic status (SES), and ethnicity and culture, engender and encourage or discourage diverse parenting cognitions and practices. Again, these represent

only a few of many possible contextual factors that likely influence parenting; neighbors, workmates, media, and ecology, for example, do so as well. It is also important to recognize that childrearing cognitions and practices evolve and change with time (Bronfenbrenner, 1958; French, 2002)—in classical Rome the *pater familias* could dictate the life and death of his children, where today's laws tend to favor mothers—and so the attitudes and actions of parents at any one time may differ from those characteristic of parents of different eras.

### ***Family Structure and Parenting***

Parenting is influenced by family configuration broadly construed. For example, dramatic changes in family dynamics take place when a second baby is born into the family (roughly 80% of mothers in the United States will have more than one child; Dye, 2010), and parenting remains similar but also differs in diverse ways for first- versus laterborns in the same family (Furman & Lanthier, 2002). Analysis of data from the American Time Use Survey revealed that in two-child families the firstborn receives about 25 more minutes of quality time with mothers and 20 more minutes with fathers each day than does the second-born at the same age, leading to an aggregate difference of about 3,000 hours from age 4 to 13 (Price, 2008). A quality-quantity trade-off is also pervasive in preindustrial societies, where larger family size has been linked to poorer survival and growth outcomes of later offspring (Strassman & Gillespie, 2002), and in Western societies, where larger family size is associated with less direct parental involvement in key childcare activities (Lawson & Mace, 2009). Quantitatively, mothers engage, respond, stimulate, talk, and express positive affection more to first- than to laterborns, even when first- and laterborns show no differences in their behavior, indicating that some parenting reflects pure parity and not child effects (Belsky, Gilstrap, et al., 1984). However, in primates survival rates for infants are higher among multiparas compared with primiparas (Hrdy, 2009): for baboon infants of first-time mothers 29%, versus 63% for infants born to experienced mothers (Altmann, Hausfater, & Altmann, 1988). Human first-time parents report more intense preoccupation with newborns than do experienced parents (Kim et al., 2013), and when parent-adolescent relationships are assessed at the same age for two siblings, parents report experiencing less conflict with their secondborn as compared with their firstborn adolescent and exhibit greater knowledge of their secondborn's daily activities as compared with their firstborn's daily experiences (Whiteman, McHale, & Crouter,

2003). The latter kinds of results are consistent with the notion that parents learn from their previous childrearing. Parents may also act toward children in the same family differently because children differ in age, intellect, or personality. Combined with variation in genetic makeup (the 50% siblings do not share), within-family variation in parental thinking and treatment is a potent factor in accounting for why children in the same family may differ from one another (Caspi et al., 2004; Jenkins, Rasbash, & O'Connor, 2003).

Other equally dramatic variations and changes in family structure (some not usually so positive) may have diverse consequences for children's parents and their parenting and for children's development. Preterm, developmentally disabled, and ill children (Goldberg & DiVitto, 2002; Hodapp, 2002; Zuckerman & Keder, Chapter 15, this *Handbook*, this volume) and multiple births (Damato, 2005; Lytton & Gallagher, 2002) are examples that spring to mind. If, as the CDC's Autism and Developmental Disabilities Monitoring Network estimates (Centers for Disease Control and Prevention, 2014a), about 1 in 88 children in the United States is diagnosed with an autism spectrum disorder (ASD), consider the world those parents face (Hjalmarsson, 2013; Salas, 2012). New high rates of U.S. American mothers participating in the labor force (two in three mothers; U.S. Department of Labor, 2011; Repetti & Wang, 2014), single parenthood (four in 10 families; Marquardt, Blankenhorn, Lerman, Malone-Colón, & Bradford-Wilcox, 2012; J. A. Martin et al., 2013; Weinraub, Horvath, & Gringlas, 2002), as well as separation and divorce (one in two marriages; Hetherington & Stanley-Hagan, 2002) certainly alter or disrupt parenting and upset and complicate family processes, as do transitions to stepparent and foster family status (Ganong et al., Chapter 4, this *Handbook*, this volume; Haugaard & Hazan, 2002; Hofferth & Anderson, 2003). Notable in this connection, and a dire observation calling for research as well as remediation, is the great incidence of child abuse in the stepparent population (Daly & Wilson, 1988). Still other vicissitudes of life (financial stress, death of a parent, military deployment, and the like) alter family structure and so parenting and child development (Duncan, Magnuson, & Votruba-Drzal, Chapter 14, this *Handbook*, this volume; Ganong et al., Chapter 4, this *Handbook*, this volume).

### ***Support Networks and Parenting***

Integration or isolation from potential support networks facilitates or hampers parenting. Support refers to the psychological and tangible resources available to individuals

through their relationships with family, friends, neighbors, work associates, and others. Normally, supportive networks have positive effects on children's parents. Support from family members and other groups is associated with successful transition to parenthood (Bird, Peterson, & Miller, 2002; Elek, Hudson, & Bouffard, 2003), and afterward mothers who report supportive relationships with "secondary parents" (grandparents and the like) are less harried and less overwhelmed, have fewer competing demands on their time, and as a consequence are more available to their children and are more competent and sensitively responsive to their children than are those bereft of such relationships (Crnic & Greenberg, 1990; Grych, 2002). Benefits of support could obtain because support affords parents regular positive experiences and so bolsters overall well-being, because support provides a sense of predictability and stability in one's life situation and recognition of self-worth, or support buffers stress and mental health issues (Bird et al., 2002). Members of support networks can also teach and encourage parents in more developmentally appropriate caregiving.

Several significant questions have motivated work in the area of parent support. One concerns sources of support. Emotional and childcare support from a spouse (if not from other family members) are associated with well-being, greater life satisfaction, and more positive affect and competence (DeLongis, Capreol, Holtzman, O'Brien, & Campbell, 2004). In the Civitas Initiative et al. (2000) national survey, 70% of mothers of children under 3 reported that they relied on their spouse and 66% on their mother for support. Other people, especially in-laws, exerted an impact on fathers' commitment to parenthood and satisfaction with being a parent (Solantaus & Salo, 2005). Marital status and father presence in the home are critical to the young mother's well-being (Brown, Goslin, & Feinberg, 2011) and account for the quality of maternal-child emotional relationships (Bornstein, Cote, et al., 2012). Fathers who felt less supported by their partners, and those noticing a greater change in their partner and in their relationship postpartum, held a more negative attitude toward fatherhood and indicated more deleterious adaptive problems postpartum (Letourneau, Duffett-Leger, Stewart, Dennis, & Tryphonopoulos, 2011). Friends and relatives constitute a major base of information for younger parents with little child-rearing experience. Although health care professionals are less immediately accessible, they constitute an important reserve for all ages and social classes of parent but are the most often consulted about emergent or specific medical problems (Hickson & Clayton, 2002; Hulbert,

2003). In the Civitas Initiative et al. (2000) survey, 54% of mothers reported that they relied frequently on their child's doctor/pediatrician, 25% on nurses, and 20% of childcare providers for information and advice. At the same time, parents report that many anticipatory guidance topics are not covered in well-child visits, and that, even after such visits, they can still use more information (Golan et al., 2008; Sanghavi, 2005). Although it sometimes conflicts with information in other messages or from health care professionals and can be inaccurate, more and more contemporary parents turn to the Internet for quick and practical solutions; the child-rearing concerns mothers express in chat rooms and on message boards relate most often to feeding or eating, sleep, development, discipline, toilet-training, and mother-child relationships (Porter & Ispa, 2012).

A second question in this literature concerns the types of support and the relative importance of the objective amount of support available to a parent versus the parent's perception of support. Support is multidimensional and may be educational, emotional, inspirational, tangible, or structural (Bryant, 2012). Supports may be informal (extended family) or formal (parent education programs); both influence parenting (Cochran & Niego, 2002) and so children. Quantitatively, more childcare support is associated with higher-quality face-to-face interactions between mothers and babies (Levine, García Coll, & Oh, 1985). However, greater perceived support (both global and parenting support in particular) has been linked with lower levels of parenting stress, more positive parenting and relationships with children, and fewer negative interactions with children (Bonds, Gondoli, Sturge-Apple, & Salem, 2002; Ensor & Hughes, 2010; Izzo, Weiss, Shanahan, & Rodriguez-Brown, 2000; Suzuki, Holloway, Yamamoto, & Mindnich, 2009). The majority of existing research links global perceptions of support to parenting competence and well-being and suggests that it may matter more that parents feel support of some sort from some source rather than the amount, type, or basis of support.

### *Socioeconomic Status and Parenting*

Socioeconomic status comprises income, education, and occupation of householders and is broadly influential in parenting (Bornstein & Bradley, 2003). Although parents in different strata behave similarly in certain ways, SES orders a wide variety of cognitions and practices of parents toward children as it does the home environment (Bornstein, Hahn, Suwalsky, & Haynes, 2003; Bradley & Corwyn, 2002; Hoff, Laursen, & Tardif, 2002). SES-related variation in parenting affects the likelihoods that parents



read books on childcare and read books to their children (Bornstein et al., 2010).

Higher-SES mothers converse with their children more, and in more sophisticated ways, than do lower-SES mothers (Hart & Risley, 1995, 1999; Hoff, 2003), and mothers' encouragement in language undoubtedly facilitates self-expression in children; higher-SES children produce more gestures and sounds and later more words than do lower-SES children (Rowe & Goldin-Meadow, 2009). Parents in higher socioeconomic strata also change more flexibly and more rapidly in response to changes in developmental theory than do parents in lower socioeconomic strata (Bronfenbrenner, 1958). Reciprocally, low SES and poor education are risk factors in parenting and children's development on many accounts. Low SES adversely affects mothers' psychological functioning and is associated with stress and harsh or inconsistent disciplinary practices (McLoyd, Aikens, & Burton, 2006). Around the globe, low- compared to middle-SES parents typically provide children fewer opportunities for variety in daily stimulation, have less appropriate play materials on hand, and engage in less total stimulation (Bornstein & Putnick, 2012). Kohn (1979; see Weininger & Lareau, 2009) hypothesized that social class differences in parents' child-rearing values spring from differences in the requirements and expectations parents need to succeed in their jobs. Lower-SES parents tend to believe they have less control over their children's development and profess a "natural growth" approach to child development where higher-SES parents fill children's "leisure time" with structured didactic activities (Lareau, 2003).

Education, maternal education especially, appears to be a potent ingredient in SES vis-à-vis parenting (Bornstein et al., 2003). For example, more-educated parents spend more time with their children (Guryan et al., 2008) and possess more understanding of child rearing and child development (Bornstein et al., 2010). They command great knowledge about factors that reduce risks and illness, and they implement practices at home to improve child health. Not surprisingly, parent education links to many child health and psychosocial outcomes (E. Chen et al., 2002; Duncan et al., Chapter 14, this *Handbook*, this volume). Maternal education has significant effects on birth weight and gestational age from the start (Currie & Moretti, 2003), and in the long-term higher levels of maternal education are associated with better cognition and higher education in children, net household income and other demographic characteristics (Duncan & Brooks-Gunn, 1997). In short, the positive characteristics of caregiver (especially

maternal) education vis-à-vis child development are profound and ubiquitous. In many low- and middle-income countries (LMIC) around the globe, maternal education, net of other family socioeconomic indicators, is positively related to the mother's own health care utilization as well as the nutritional status and health care utilization for her children (Abuya, Ciera, & Kimani-Murage, 2012; Ahmed, Creanga, Gillespie, & Tsui, 2013; Burchi, 2012). Unfortunately, instructional capital there in the form of maternal education is limited: In 39 LMIC, the median years of education for women aged 25 and over was only about 5 in 2010 (Barro & Lee, 2010).

Overall, financial stresses associated with low SES adversely affect the general well-being and health of parents and demand attention and emotional energy from them (Magnuson & Duncan, 2002). In McLoyd et al.'s (2006) analysis, stress on impoverished parents stemming from day-to-day struggles to find the resources that afford food and shelter, and the stress of trying to cope with living in deteriorated housing and dangerous neighborhoods undermine parenting skills and contribute to disorganizing family life (Toldson & Lemmons, 2013). These circumstances, in turn, may reduce parents' attentiveness, patience, and tolerance toward children (Crnic & Low, 2002). As reviewed earlier, stress on parents is associated with decreased sensitivity to child cues, more negative feelings toward children, and harsher parenting styles (Seigny & Loutzenhiser, 2010). The deterioration of parenting in low-SES circumstances is believed responsible for many adjustment difficulties of children growing up in impoverished families. The effects of parental poverty might be moderated by age, gender, or other individual-difference characteristics of the child, however; and, what's noteworthy, parenting in upper social strata does not absolutely protect children from risks of disadvantage, problem behaviors, or even substance use (Luthar, 2003; Luthar & Barkin, 2012; Luthar & Latendresse, 2005; Racz, McMahon, & Luthar, 2011).

### ***Ethnicity, Culture, and Parenting***

Like social class, issues of ethnicity and culture permeate how children's parents view parenting and how they parent (Bornstein & Lansford, 2010; LeVine, 2003). Variation in beliefs and behaviors is always impressive, whether observed among different ethnic groups in one society or across cultural groups in different parts of the world. Regarding misbehavior of their children, for example, African American parents convey strong and immediate messages, European American parents emphasize



problem solving and negotiate consequences, and Native Americans have children spend time with extended family (Lubell, Loften, & Singer, 2008; McBride Murry, Hill, Witherspoon, Berkel, & Bartz, Chapter 11, this *Handbook*, this volume). As mentioned earlier, European American mothers endorse the importance of independence and self-assertiveness when asked to describe their ideal child, whereas Latina American mothers accentuate obedience and respect for theirs, and each parents in accord with those beliefs (Tamis-LeMonda & McFadden, 2010). Ethnic differences pervade parenting cognitions, practices, and effects as well as parent-child relationships (Hofferth, 2003; Park & Bauer, 2002). Likewise, expected timetables for child development in new mothers in Australia of Australian versus Lebanese heritage differ, showing that culture-of-origin shapes parenting much more than other seemingly more immediate factors, such as experiences observing their own children, comparing them to other children, and advice from friends and experts (Goodnow, Cashmore, Cotton, & Knight, 1984).

The role of culture in parenting—what we can learn from the way parents in cultures not our own rear their children—has persisted in popular fascination from the Classical period of Greece, when Xenophon and Aristotle were captivated by *agoge*, the Lycurgan system of Spartan childrearing, to the present day “Tiger Mother” (Chua, 2011) and purported “wisdom” of French parents (Druckerman, 2012). Culture influences children’s parents and so child development from very early in life in terms of who parents, how parents conceive of childhood, the ways parents care for children, and so forth (Benedict, 1938; Selin & Stone, 2009; Whiting, 1981). In some cultures, children are reared in extended families where care is provided by many alloparents; in others, children and their mothers are isolated from almost all social contexts. In some, fathers are treated as irrelevant social objects (“honored guests”); in others, fathers assume complex and continuing responsibilities for children (“house husbands”). European American parents enjoy eye contact, lavish praise, foster language development in their children, are responsive to crying, and generally avoid physical punishment; Gusii (Kenya) parents gaze avert, explicitly reject praise, regard it as silly to talk to a baby, are angered by cry, and cane children as a way to instill control (Quinn, 2005). Parents in some cultures believe that play with children affords important development-promoting experiences, parents in others see play primarily as child amusement, and parents in still others do not include play at all in their job description (Bornstein, 2007). Cultures

also differ vastly in who is responsible for young children and, consequently, for the estimated 163 million children around the world who do not live with a biological parent (Leiden Conference on the Development and Care of Children Without Permanent Parents, 2012) whether or not children benefit from their diverse informal caregiving arrangements (Leinaweaver, 2014).

Different ethnic or cultural groups possess parenting ideas, approach parenting tasks, and value parenting outcomes differently (Cote, Bornstein, Haynes, & Bakeman, 2008; Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume). Japan and the United States maintain reasonably similar levels of modernity and living standards, and both are child-centered societies, but the two differ dramatically in terms of history, beliefs, and behaviors with respect to parenting. Traditional Japanese mothers expect early mastery of emotional maturity, self-control, and social courtesy in their offspring, whereas U.S. American mothers expect early mastery of verbal competence and self-actualization in theirs. U.S. American mothers promote autonomy and organize social interactions with their children so as to foster physical and verbal assertiveness and independence, and they promote children’s mastery of the external environment. Japanese mothers organize social interactions so as to consolidate and strengthen closeness and dependency within the mother-child dyad, and they tend to indulge young children (Bornstein, Cote, et al., 2012; Morelli & Rothbaum, 2007). Li, Fung, Bakeman, Rae, and Wei (2013) compared conversations between European American and Taiwanese mothers and children (6–10 years) about good and poor learning. European Americans mentioned mental activities and positive affect more, whereas Taiwanese mentioned learning virtues and negative affect more.

The general cultural climate moderates parenting effects. In diverse domains of development, parenting practices relate differently to children’s adjustment depending on the broader cultural context. A study of associations between corporal punishment and children’s adjustment in China, India, Italy, Kenya, the Philippines, and Thailand disclosed that more frequent corporal punishment is linked to higher levels of child aggression and anxiety in all six countries, but the connection weakens where the use of corporal punishment increases in cultural normativeness (Lansford et al., 2005). Culturally defined beliefs are so powerful that parents sometimes act on them as much as or more than on their own senses (or what their good sense) tells them about their own children. Parents in Samoa, for example, reportedly think of young children as having

an angry and willful character, and, independent of what children might actually say, parents consensually report that their children's first word is *tae*, Samoan for "shit" (Ochs, 1988).

Ethnic and cultural differences notwithstanding, children's parents also share some striking commonalities in their cognitions and practices. Bringing up children is a universal task, and in the end parents everywhere must nurture, protect, and promote the growth of children if their children are to survive, there are only so many mechanisms available to socialization, and (as noted earlier) all well-intentioned parents possess similar aspirational goals for their children, including physical health, emotional security, intellectual achievement, and social adjustment, if their children are to thrive. Some cross-cultural similarities in parenting may reflect shared biological bases of caregiving, others the historical convergence of parenting styles, and still others increasing unanimity on account of worldwide migration or dissemination via mass media.

The moderation of parenting by ethnicity and culture calls for several caveats and qualifications. First, the greater part of the contemporary database in parenting refers to Western, educated, industrialized, rich, and democratic populations (Bornstein & Lansford, 2010; Henrich et al., 2010) and has not often enough situated parenting by specific ethnic groups or within specific cultural traditions. This situation is changing (see, for example, the introduction to the special issue of *Parenting: Science and Practice* on parenting attributions and attitudes across cultures, Lansford & Bornstein, 2011; Selin, 2014). Neither ethnicity nor culture is homogenous or monolithic either (Calzada, Hunag, Anicama, Fernandez, & Brotman, 2012). For example, child age is influential in Latino/a parenting practices; parenting with preschool children is usually indulgent or permissive, but once children become older, parenting is guided by stricter standards (Halgunseth, Ispa, & Rudy, 2006). Specialized meanings attend ethnicity and culture. Low-income African American mothers in Early Head Start use physical discipline but adopt distinctive terminology and conceptions for different forms: "spank" and "slap" are correctives and not abusive, but "whup" and "switch" connote beating (Ispa & Halgunseth, 2004). In a related way, finally, the child-rearing cognitions and practices of one's own group seem to have exaggerated moral force and appear quite natural to parents when they may actually be rather unusual when compared with those of other groups. We tend to be instinctively critical of, and resistant to, childrearing regimens different from our own (Quinn, 2005). This observation extends to parents in one

ethnic or cultural group conceiving of a given parenting behavior as normative that parents in another conceive of as harsh or abusive.

In brief, parenting is conditioned by multiple contextual spheres of influence in which the parent-child dyad is embedded, including the family's structure, network, class, ethnicity, and culture. Other contextual factors, such as religious affiliation (Gaunt, 2008; Mahoney, 2005; Mahoney, Pargament, Tarakeshwar, & Swank, 2008) and neighborhood residence (Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume) not addressed here directly, likewise exert molding influences on children's parents.

### A Methodological Consideration

The literature concerning endogenous and exogenous sources of influence on parenting is burgeoning. However, antecedents to parenting have typically been studied in isolation, and few investigations evaluate multiple influences simultaneously. Thus, the overlap of different antecedents vis-à-vis the unique contribution of any one influence on parenting remains essentially unexplored. For example, young parent age may exert untoward effects on parenting (and on children) because people who have children early in their life career are more likely to have associated problems (low education, low SES) that also adversely affect parenting and children. With this limitation in mind, family systems theorists have emphasized the importance of considering the possible independence *and* interdependence of multiple organismic, environmental, and experiential determinants of parenting. Furthermore, the size of the effect for any one antecedent-outcome relation, or for contingencies that operate across different components of the family system, might be small in magnitude. This is not a statement about the unimportance of small effects, but rather of the need to build models of parenting that focus on the ways small effects might combine or grow in magnitude over time.

### Summary

To understand variation in parenting, information about multiple sources is required, including biological and psychological characteristics of each individual in the family, relationships with parents' families of origin, relationships between parents and between parents and each child, and relationships between nuclear family members and key individuals or institutions outside the family (friends, peers, work, childcare, school, ethnicity, culture).

Parenting stands at the confluence of many rivulets of influence; some flow from within the individual, whereas others spring from sources external to the parent in the child and in the landscape that situates children and their parents.

## PRACTICAL PARENTING

Practically speaking, parenting has positives, such as intimacy, nurturance, and rewards, which we want to enrich, but is also encumbered with negatives, such as frustration, anger, and violence, which we want to prevent. To the good, through diverse analyses Bianchi (2000), Sayer, Bianchi, and Robinson (2004), and Aguiar and Hurst (2007) concur that adults in the United States and elsewhere in the world (Gauthier et al., 2004) are spending more time with their children today than in the past. Still, nearly one-half of a national sample of parents rue that they spend too little time with their children (Bianchi, Robinson, & Milkie, 2006).

It is also a sad fact of everyday life that parenting children does not always go well or right. Infanticide was practiced historically, and although it is rare today, it is not unknown (Hrды, 1999). Short of that, vulnerable young are too commonly the victims of neglect (forgotten in locked cars on hot days, never immunized, or left to waste away in orphanages) and abuse (born drug addicted, put in harm's way, or trafficked). Infant cries draw a parent's attention but also trigger shaken baby syndrome (Lee, Barr, Catherine, & Wicks, 2007) and assaults (Cavanagh, Dobash & Dobash, 2007). Every year, child-protection agencies in the United States alone receive 3 million referrals for child neglect and abuse involving about 6 million children younger than 5. About 80% of the children in investigated neglect and abuse cases are not removed from their home, although about 80% of perpetrators are parents, the vast majority biological parents. According to the National Research Council (2013), neglect and abuse amount to an estimated \$80 billion per year in direct costs of hospitalization, law enforcement, and child welfare and indirect costs of special education, juvenile and adult criminal justice, adult homelessness, and lost work productivity. Three factors increase the risk of child abuse: parental depression, parental substance abuse, and whether the parents were neglected or abused as children.

Although usually protected, we see that children are still too often exposed to relatively hostile and emotionally negative climates in the home, and parents in the front seat of the car fail to heed that children in the back

seat overhear what they say. By the current standards of meta-analytic evidence, parents contribute to their children's internalizing and externalizing behavioral problems (Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010; Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012). Moreover, many parents resort to harsh verbal and physical treatment and even corporal punishment. Exposure to domestic violence as well as caregivers' psychological aggression and violence are risk factors for children's mental health problems, physical injuries, and even death. Aggression against children is all too common in the United States (Gershoff, 2002) as it is in other countries around the world (Lansford et al., 2005; Mejia, Miewer, & Williams, 2006). From Finland and Denmark to Kenya, child-rearing violence in one year predicts child-externalizing behavior later (Peltonen, Ellonen, Larsen, & Helweg-Larsen, 2010; Skinner, Oburu, Lansford, & Bacchini, 2013). The American Academy of Pediatrics (AAP) has declared that "physical discipline is of limited effectiveness and has potentially deleterious side effects," recommending that "parents be encouraged and assisted in the development of methods other than spanking for managing undesired behavior." The AAP reaffirmed that pediatricians encourage parents to use alternate age-appropriate forms of nonaggressive discipline, such as distraction, time-outs, and offering explanations. Internationally, United Nations documents such as the Convention on the Rights of the Child have identified violence toward children as a problem to be eliminated at a national level. The use of corporal punishment toward children has now been legally banned in all settings in 34 countries, and legislation is pending in several others (Global Initiative to End All Corporal Punishment of Children, 2013).

Strong secular and historical trends operating in modern society—industrialization, urbanization, poverty, increasing population growth and density, and especially widespread dual parental employment—constitute centrifugal forces on parenting. Society at large is also witnessing the emergence of striking permutations in parenthood and in the constellation of the family structure that have plunged the family generally, and parenthood specifically, into an agitated state of question, flux, and redefinition (Ganong et al., Chapter 4, this *Handbook*, this volume; Solomon, 2012). Because these society-wide developments exert many unfortunately debilitating influences on parenthood, on parenting, and, consequently, on children and their development, a significant proportion of parents needs assistance to identify more effective

strategies to optimize child care and to create more satisfying family relationships. Not surprisingly, a one-time U.S. commissioner of education preached that every child has a right to a “trained parent.” Parents are usually the most invested, consistent, and caring people in the lives of their children, so providing them with knowledge, skills, and supports will help parents respond more positively and effectively to social and child-related challenges.

Only a fraction of parents who need such services receive them, however. Thus, organizations at all levels of society increasingly feel they ought to intercede in child rearing and right social ills through parenting preventions and interventions. As a result, contemporary parenting has witnessed an explosive growth in information and support programs. One implication of the increasingly sophisticated view of the origins and conduct of parenting is that many aspects of parenting are compliant to education and intercession; thus, what we learn about parenting holds the promise of far-reaching practical implications. In the view of some critiques, this trend also paradoxically leads away from a focus on parents as the proximal protectors, providers, and proponents of their progeny and toward entrusting childrearing to experts and the state.

Contemporary parents from families along multiple risk continua might become more effective. Preventions and interventions designed to help parents come in a variety of venues (psychotherapy, classes, media), settings (homes, schools, health clinics, houses of worship), and formats (individual, family, group) and with a variety of goals (universal versus specific). For example, child-focused programs are based on theories that emphasize biological and psychological processes of change within the child; parent-focused programs primarily target parents’ cognitions and practices; translational programs combine child- and parent-focused perspectives to improve the quality of parent-child relationships.

Competences are knowledge, skills, abilities, personal characteristics, and attitudes, and competencies to adequately perform a task, duty, or role are (usually) learned (Roe, 2002). Competent parenting, crucial to child welfare and well-being, can be learned. Profession-specific competencies provide motivation and direction for learning as well as a means to judge the adequacy of parenting programs (Epstein & Hundert, 2002). Many experimental trials and parenting intervention programs have been devised. A review of 46 randomized trials provides evidence of prevention of a wide range of problem outcomes from 1 to 20 years later. However, this literature offers

a paucity of evidence concerning processes that account for program effects (Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011). Interventions to promote positive parenting have been touted to offer positive outcomes for children, but they often consume substantial resources and require rigorous appraisal. Biglan, Mrazek, Carnine, and Flay (2003, p. 438) called for the integration of more science into societal parenting practices to prevent youth behavior problems and to promote “agreement on a set of consensus standards for selecting disseminable preventive interventions.” An example is Triple P, the Positive Parenting Program, a popular multilevel behavioral family intervention (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009; Sanders & Kirby, 2010; Sanders, Markie-Dadds, & Turner, 2003; Wilson et al., 2012). Systematic reviews and meta-analyses comparing Triple P with wait-list or no-treatment comparison groups reveal relatively small maternal and smaller paternal outcomes that do not differ from control conditions.

Some interventions succeed. For instance, targeted interventions are known to improve maternal mentalizing and sensitivity (Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2007; Sadler et al., 2013), and the Family Check-Up, an intervention designed to prevent young children’s problem behavior via improvements in parents’ positive behavior, reported improvements on key indicators of children’s school readiness (Lunkenheimer et al., 2008). Unhappily, however, most interventions fail and do so for a wide variety of reasons, as when parents short-shrift intervention “homework” assignments or program staff fail to help parents access needed services or measurement is biased or a control group is contaminated through unintended diffusion of the parenting intervention (Bodenmann, Cina, Ledermann, & Sanders, 2008; Fixen, Naoom, Blase, Friedman, & Wallace, 2005; Goodson, Layzer, St. Pierre, Bernstein, & Lopez, 2000; Hebbeler & Gerlach-Downie, 2002; Okagaki & Bingham, 2005; Pinquart & Teubert, 2010; West, 2009; see Kaminski, Valle, Filene, & Boyle, 2008, for a meta-analysis of training programs).

By deconstructing those reasons critically, we can learn ways that future interventions might succeed. Happily, Powell (2013) provides solid and timely guidance on central aspects of undertaking and evaluating parenting interventions, including preliminary work, sampling, research design, options for comparison conditions, measurement of implementation fidelity, and analysis of outcomes (Boutelle, Cafri, & Crow, 2011; DeGarmo & Forgatch, 2005; Flay et al., 2005; McCall & Green, 2004;



Sandler et al., 2011; Shadish, Cook, & Campbell, 2002). To summarize some main points of that tutorial, parenting interventions should be based on theoretical and empirical models that specify the overarching goal of the intervention with regard to anticipated improvements in specific child outcomes, how change in malleable parenting variable(s) targeted by the intervention is expected to improve child outcomes, and how intervention components are expected to change focal parenting variable(s). Development of a coherent, measureable theory of change and articulation of a precise logic model are critical to an intervention functioning as intended. Randomly assigning intervention and comparison conditions to parents or to larger units in which parents are based (e.g., schools) will provide the strongest evidence of intervention effectiveness, assuming the outcome study is well implemented. Parenting interventions that assess both parent and child outcomes make more robust contributions than those that only assess parenting outcomes. Likewise, intervention studies should routinely determine whether intervention effects are sustained beyond the intervention period (Olds et al., 2002). Provision of some level of support to comparison group participants is consistent with intervention researchers' ethical responsibilities, particularly with vulnerable populations (Celano, Holsey, & Kobrynski, 2012; Sieber, 2012). One can be certain that intervention fidelity—the degree to which a program has been implemented as planned—will be less than 100% ensured (Durlak & DuPre, 2008; Korf-macher, O'Brien, Hiatt, & Olds, 1999); but fidelity to an intervention protocol predicts change in parents' practices and children's behavior (Forgatch et al., 2005). Finally, no single intervention fits all (Barrera, Castro, & Steiker, 2011), so, as an Institute of Medicine report (O'Connell, Boat, & Warner, 2009) recommended, interventions that successfully adopt and integrate cultural mazes will experience the likeliest successes with both consumers and community agents (see Takanishi & Bogard, 2007).

Higher reflective functioning is associated with sensitive parenting and improved child development (Pajulo et al., 2009). Core concepts of reflective functioning and mindful parenting include, in addition to understanding mental states and intentions, full presence, nonjudgmental stances, emotional awareness, self-regulation, and compassion (Duncan, Coatsworth, & Greenberg, 2009), and certain mindfulness tools can help to address pressing parenting requirements successfully. Central ingredients include:

- Children's parents benefit from knowledge of how children develop. Therefore, the normative patterns

and stages of children's physical, verbal, cognitive, emotional, and social development should be part of the knowledge base for parenthood.

- Children's parents need to know how to observe children and how to interpret and use what they learn. Informed child watching helps to clarify a child's level of development in relation to what parents want children to learn and to accomplish. Observing also allows parents to identify potential trouble early and may help parents respond to it more meaningfully.
- Children's parents need all manner of skills for managing their children's behaviors. Knowledge of alternative methods of discipline and problem avoidance, for example, is basic.
- Children's parents need to understand the tremendous impact they have on their children's lives through the simplest things they do: their attention, expressed pleasure, listening, and interest.
- Children's parents need to know how to take advantage of everyday settings, routines, and activities to create learning and problem-solving opportunities that enhance childhood and parenthood.
- Children's parents need to be patient, flexible, and goal-oriented—to call on their personal resources and extrapersonal sources of support—and they must command an ability to extract pleasure from their encounters with children.

The responsibility for determining the child's best interests rests first and foremost with parents. Parents are children's primary advocates and their frontline defense. Parents are the corps available in the greatest numbers to lobby and labor for children. Few ethical or sentient parents want to abrogate their child-rearing responsibilities (Baumrind & Thompson, 2002). Insofar as children's parents can be enlisted and empowered to provide children with experiences and environments that optimize their development, society is positioned to obviate after-the-fact remediation. In the dedication of *Some Thoughts Concerning Education* to "Edward Clarke, of Chipley, Esq.," John Locke (1692) wrote: "The well educating of their children is so much the duty and concern of parents, and the welfare and prosperity of the nation so much depends on it, that I would have every one lay it seriously to heart." On these grounds, the doctrine of parental rights remains a fundamental premise to child rights. Parents sometimes don't know what to do, but they can find out; they sometimes do know what to do, but still do not get into the trenches and do it.



## CONCLUSIONS

There is no such thing as an infant.

—*D. W. Winnicott (1965, p. 39)*

Evolutionary theory places parenting at the pinnacle of the pyramid of human needs, above immediate physiological needs as well as needs for affiliation, esteem, and mate acquisition (Kenrick, Griskevicius, Neuberg, & Schaller, 2010). In turn, parents intend much in their interactions with their children: They foster their children's emotional regulation, development of self, social sensitivities, and participation in meaningful relationships and experiences inside and outside of the family through the models they portray and the values they display, and they promote their children's mental development through the structures they create and the meanings they place on those structures. The complex of parent cognitions and practices is divisible into domains, and parents tend to show individual variation in how they express their cognitions and practices as they do a core consistency in certain of those domains. Some aspects of parenting are frequent or significant from the get-go and wane as children develop; others wax in importance over the course of children's development. Although not all parenting is critical, and single events are rarely formative, parenting certainly has long-lasting effects. The interactive and intersubjective aspects of parent and child have telling consequences for the person's future, and little and big consistencies of parenting aggregate over childhood to help construct the person. Common public misperceptions about parenting—that all different ways to parent work equally well, that people naturally know how to parent, and that parenting cannot be taught—are falsehoods in need of correction. Researchers and theoreticians today do not ask whether parenting affects child development, but which parent cognitions and practices affect which aspects of child development when and how; they are interested also to learn the ways in which individual children are so affected, as well as the ways individual children affect their own development (Bornstein, 2013b).

Human development is too complicated, nuanced, and dynamic to assert that children's parents alone determine the course and outcome of their ontogeny; parenthood does not fix the route or the terminus of child development by itself. Status in maturity is shaped by the attitudes and actions of individuals themselves across the life span. Children bring unique, physical, mental, and social lives to everyday encounters with adults that shape their caregiving

experiences. Children also alter their environment as they interact with it, and they interpret their world in idiosyncratic ways. These intrapersonal factors and extrapersonal contexts play important roles in determining the nature, function, and effect of parenting. Additionally, a full understanding of parenting depends on the several ecologies in which parenting is embedded. Family composition, social class, ethnicity, and culture all exert salient influences on how parents behave toward their children and what they believe about their children as they grow. So, parent and child convey distinctive characteristics to every mutual interaction, and both are changed as a result. Parent and child actively create one another through time.

Children's parents have central parts to play in their physical growth, cognitive advance, emotional maturation, and social development. A better understanding of the nature of the human being is afforded by examining parents' cognitions, practices, and their consequences—the unique and specific influences of the individual's parents. Successful parenthood ultimately means having facilitated a child's self-confidence, capacity for intimacy, achievement motivation, pleasure in play and work, friendships with peers, and continuing intellectual success and fulfillment. Parenting experiences within the family exercise a major impact over each of these spheres of development.

When a rat dam is given a choice between a chamber that has been associated with pups and one where she received an injection of cocaine, there is a period of time after parturition when new dams prefer pups, spurning even the power of narcotics in favor of offspring (Mattson, Williams, Rosenblatt, & Morrell, 2001; Pereira, Seip, & Morrell, 2008; Seip & Morrell, 2007). As judged by psychoanalysis, ethology, psychology, and neuroscience, children's parents engage in a peculiar kind of life's work: Parenting is a delicate blend of empathy, altruism, and prosociality, blind devotion and selflessness, marked by constantly challenging demands, changing and ambiguous criteria, and all too frequent evaluations. Defining principles of parenting, such as specificity, moderation, transaction, and thematicity as well as indirect and direct effects, render parenting less than straightforward. Parenting also entails both affective components, in terms of commitment, empathy, and positive regard for children, and cognitive components—the how, what, and why of caring for children. Thus, different tasks are more or less salient and compelling at different points over the life course of childrearing. The path to achieving satisfaction and success in parenting is not linear or incremental, but tends to meander.

It is obvious that parenthood is central to childhood, to child development, and to society's long-term investment in children. Children's parents are fundamentally committed to their survival, socialization, and education. But parenthood is also a major phase and constituent ingredient of mature adulthood. So the motivation to know about the meaning and importance of parenthood and parenting exists as much for each individual as out of the desire to improve the lives of children and the welfare of society. For the majority of humankind, parenting is a process that formally begins before pregnancy and continues through the balance of the life span. Practically speaking, *once a parent, always a parent*.

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## CHAPTER 4

# Children in Diverse Families

LAWRENCE GANONG, MARILYN COLEMAN, and LUKE T. RUSSELL

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## OVERVIEW

What makes a family diverse? Which families emerge as we think about “diverse families”? Developmental scholars often highlight ethnic variability when using *diversity* as an adjective describing families, but that is not the focus of this chapter (see McBride Murry, Hill, Witherspoon, Berkel & Bartz, Chapter 11, this *Handbook*, this volume,

for a review of ethnically diverse families). Instead, we concentrate primarily on structural variability of families, on multiple ways in which families are created and maintained, and familial processes that accompany structural variations.

In this chapter we examine several types of diverse families as environmental contexts within which children develop: families headed by unmarried and cohabiting parents, children who have had a parent die or whose parents have divorced, stepfamilies, families headed by gay and lesbian individuals, grandfamilies (grandparents

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raising grandchildren), and parents who utilized assisted reproductive technologies (ART). These categories are not homogeneous, so when feasible, we examine the state of the scholarship within subcategories of these larger family types. Most of the research we review was conducted in North America, but we also include studies from Europe, Australia, and New Zealand.

The diverse families we review in this chapter are only some of the family types that could have been included. Space constraints forced hard decisions about what to include. Not included were children who are adopted, in foster families, or whose parent(s) are incarcerated, in military service, or institutionalized. Also not included were families who are considered diverse by virtue of non-normative family interactions (e.g., child abuse, parental mental illness). We focused on family structures we have studied (e.g., unmarried, cohabiting, divorced, stepfamilies, grandfamilies) and family structures that personally interested us (e.g., the bereaved, gay and lesbian parents, and ART families).

We open this chapter by defining family diversity, followed by an examination of theoretical and conceptual perspectives. Next are brief examinations of research on children's development in our selected types of diverse families. We close by offering observations about developmental trends in research trajectories and methodological challenges and concerns in the study of children in diverse families.

## DEFINING DIVERSE FAMILIES

Diverse families, unlike traditional families, often are not formed by marriage, and when they are, the marriage may not be the first for at least one of the adults. The children, therefore, may be genetically related to only one parent, and sometimes to neither parent. Diverse families also may include more than two adults who serve in parental roles, or only one adult, not always a genetic parent, may be rearing children. Legal connections between parents and children, like genetic bonds, also vary widely in diverse families, which potentially has both direct and indirect effects on children's development (Biblarz & Stacey, 2010; Ganong & Coleman, 2004).

In addition, unlike in first-marriage (nuclear) families, families and households are not always equivalent in diverse families. That is, family membership and membership of the households in which the children reside may not coincide. The children often belong to more than one

household and are reared by coparents who live apart from each other. Their families include individuals who are not legally or genetically related to them but are nonetheless involved in helping rear them.

Finally, diverse families may be structurally similar to nuclear families, but the dynamics of the family make them divergent from the "standard." For instance, stepfamily households may appear to be structurally comparable to first-marriage families (i.e., two adults and children), but these appearances may be misleading; many children in stepparent households still have two biogenetic parents involved in raising them, along with one or two stepparents (Ganong & Coleman, 2004). Even when stepchildren have no contact with a divorced parent, there are substantive differences in interpersonal and family dynamics that distinguish stepfamilies from the families of children reared by two continuously married parents (Ganong & Coleman, 2004).

Children in diverse families, therefore, have often a divergent life course from children reared in other family forms (Ganong & Coleman, 2004). In fact, many children reside in more than one type of diverse family as unstable parental unions and changes in household membership may result in a series of family formations. These divergent personal and familial histories create challenges for developmental scholars faced with designing studies and utilizing theories that allow them to adequately assess these assorted pathways of family life.

## THEORETICAL AND CONCEPTUAL PERSPECTIVES

For decades, scholars have shown interest in examining socialization practices and children's development in families called, among other things, *nontraditional*, *deviant*, *alternative*, and *nonnuclear*. When scholars study child development in diverse families the implication is that these families diverge from some standard or normative form of family life. Although Lerner (2006), in the sixth edition of this *Handbook*, asserted that developmental scholars no longer ignore context and instead account in their scholarship for the variable effects of time, place, and interpersonal influences on individuals, he also recognized that there continues to be research on human development in which models are proposed "that *a priori* sets one group as the standard for positive or normative development and where another group, when different from this normative one, is therefore defined as being in deficit" (p. 7).

This deficit-comparison approach to developmental science continues to be a norm in the study of children (and parents) in most types of diverse families.

The standard by which all other families are compared has most often been labeled the “traditional family” (e.g., Lamb, 1982), but also has been known by other labels, including the Standard North American Family (SNAF; Smith, 1993), nuclear families, first-marriage families (Ganong & Coleman, 2004), natural families (Farber, 1973), and intact families. These “traditional” families typically are characterized by two parents, one of each sex, and their genetic offspring, with all family members residing in one household. For some scholars, these characteristics are enough for a family to be considered as traditional, but for most scholars distinctive family dynamics also must be in place (e.g., parental roles assigned by sex, primary childrearing done by the parents). For example, in an edited volume, *Nontraditional Families*, published over 30 years ago, which included chapters on dual-earner couples, families with children in daycare, shared coparenting among married parents, cohabiting couples, post-divorce families, and stepfamilies, Lamb (1982) identified four principal axioms or beliefs related to the presumed superiority of traditional families as places to rear children: (1) children need a mother and father, (2) fathers should be the primary or sole economic providers and mothers should be the main caretakers, a division of labor that is reflected by societal norms, (3) mothers are naturally more suited to raising children than are fathers, and (4) children should be reared by kin rather than by family outsiders. Although families in industrialized nations have changed considerably, these decades-old axioms persist to some degree.

In the United States and other Western industrialized nations, the continuation of heterosexual, first-marriage, nuclear families as the comparison standard for other families and for the well-being and development of children has been influenced not just by science, but also partly by societal and religious norms. For instance, since the beginning of the 21st century, the U.S. government has spent millions of dollars promoting the creation and maintenance of “healthy marriages and families,” a code term for first-marriage heterosexual families, primarily because such families are seen by religious, political, and social conservatives as the best or only form of family to enhance the well-being of children and adults (Acs, 2007). As we review research and theory about children in diverse families in this chapter, we attend not only to the application of scientific principles in these bodies of literature, but also to the role that cultural and personal

values have played, at least in some of the reviewed areas of scholarship.

### Epistemic Values

Over two decades ago, Clingempeel, Flescher, and Brand (1987) argued that the study of the effects of parental remarriage on children was influenced by two types of firmly held values, epistemic and nonesepistemic. Epistemic values about how research on children and their families should be conducted are the scholarly standards each social and behavioral science discipline attempts to inculcate in students via research methods courses, research practicum experiences, theses, dissertations, and other mentored experiences. Clingempeel et al. (1987) identified three such epistemic values that they asserted were limiting what was known about stepchildren: (1) a between-groups comparison bias, (2) a disciplinary ethnocentrism bias, and (3) the rational objectivity bias. The *between-groups bias* limited researchers to questionable choices of comparison groups in studies of stepchildren. Unlike true experimental designs in which researchers can randomly assign children to groups and control the independent (causal) variables to determine effects, naturally occurring family groups often differ from other families on multiple dimensions. They may be inherently nonequivalent in important, but perhaps unknown, ways that affect the outcomes of the dependent variables of interest (Clingempeel et al., 1987). This is known as the selection effect, and Clingempeel and colleagues thought that scholars neglected this when designing studies of stepchildren, particularly in choosing comparison groups of children and families.

The *disciplinary ethnocentrism bias* refers to conventional barriers to learning about and understanding methods, theories, and ways of conceptualizing research taught in other disciplines in which children and their families also are studied. For example, sociologists emphasize different dimensions of research and take different approaches to children and families than do psychologists. Disciplinary ethnocentrism occurs when scholars do not take a multidisciplinary lens to children and their families and “consequently, important research questions which lie at the cross points of several disciplines may remain unexamined, and the development of an integrated knowledge base may be impeded” (Clingempeel et al., 1987, p. 243).

Finally, the *rational objectivity bias* refers to adherence to a philosophy of science in which researchers strive for

detached distance between research subject and scientist. This bias, rooted in logical positivism, contends that researcher objectivity is a reachable goal that scientists may achieve by following accepted guidelines for studying children and families. We revisit these specific epistemic values later in this chapter after reviewing research on multiple forms of structurally diverse families, but for now we focus on the relevant notion that research on the effects on children of living in diverse families may be influenced by researchers' epistemic values. The fact that this is not "news" to most developmental scholars makes it no less significant when considering this vast body of research.

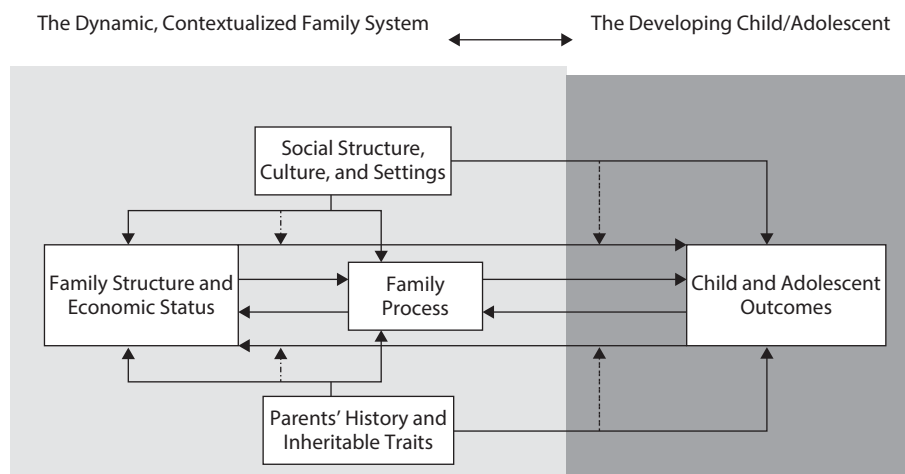
### Nonepistemic Values

In developmental sciences, epistemic values intersect with what Clingempeel et al. (1987) called *nonepistemic values*. These values are personal beliefs held by scholars, acquired via socialization by parents and other family members, religious and educational institutions, mass media, and other societal agents. The four assumptions about children's development that Lamb (1982) identified are good examples of nonepistemic values that may influence researchers. Of course, not all researchers within given areas of investigation adhere to common sets of personal values. Nonepistemic values are often based on cultural beliefs and usually represent widely held societal norms. There is variability in scholars' adherence to societal norms, however, and scholars who study children and their diverse families represent a wide array of cultural and

subcultural groups. We should expect to find some variability in the nonepistemic values found in any given body of literature. However, researchers are self-selected into their disciplines in general and into their programs of research in particular, driven by a plethora of motivations to study certain groups, to ask specific questions, and to employ some theories over others (Luker, 2008). As we have noted, the study of diverse families is an area of investigation heavily laden with personal and cultural values.

### Relational Developmental Systems Perspectives

Strong theory can offset personal biases and societal values, and a number of theoretical perspectives have been employed in the study of children's diverse families. Many of these theories or conceptual frameworks fit comfortably under the metatheoretical umbrella of relational developmental systems (Lerner, Lewin-Bizan & Warren, 2010). This family of theories includes Bronfenbrenner's bioecological model of development, life course perspectives (see Elder, Shanahan, & Jennings, Chapter 2, this *Handbook*, this volume), resilience models of development (see Masten, Narayan, Silverman, & Osofsky, Chapter 18, this *Handbook*, this volume), and Crosnoe and Cavanagh's (2010) integrative model for research on children and adolescents (see Figure 4.1). This metatheory embraces diversity, plasticity, and multiple levels of systemic influences, with the focus of the theory being the mutually influential relations between the developing individual and the multiple levels of the individual's changing context. Family is a primary context for individual development,



**Figure 4.1** Integrative model for research of families with children and adolescents.

Source: "Families with Children and Adolescents: A Review, Critique, and Future Agenda," by R. Crosnoe and S. E. Cavanagh, 2010, *Journal of Marriage & Family*, 72, pp. 594–611.

and changes to family structure or processes are of crucial importance in understanding how children develop, just as changes in children influence alterations in their familial contexts (Lerner & Overton, 2008). The relational developmental systems metaperspective is a logical framework for the study of children's development in diverse families, with other systems included in study designs as well: children and their families embedded in neighborhoods and broader communities, interacting with school, legal, work, and faith systems, and being affected by societal and cultural influences. Several other chapters in this *Handbook* focus on these nonfamilial contexts; here, we focus mostly on family as context.

Among scholars who have focused on family structure diversity, there has been a general convergence across disciplines and across bodies of literature on how children in diverse families should be studied. This convergence reveals implicit but broadly held conceptual and theoretical agreements on how family structure, economic status, and family processes intersect with social contexts and parental variables to influence children's outcomes (Crosnoe & Cavanagh, 2010). This integrative model is clearly within the relational developmental systems metatheory family.

An important feature of the relational developmental systems perspective is a holistic view that rejects dichotomies, including the distinction between basic and applied research (Lerner & Overton, 2008). This is pertinent because there are multiple reasons to apply findings from developmental science to policy and interventions with diverse families, as well as motivations to conduct research on programs designed to facilitate developmental adaptations for children and their families. We examine several such research efforts in this chapter.

## CHILDREN LIVING WITH UNMARRIED PARENTS

Here we focus on children living with unmarried parents, both single (i.e., living alone) and cohabiting biological parents. Reviewing research on children living with either unmarried single parents or with unmarried cohabiting parents—and together considered as one type of diverse family—is somewhat problematic because this categorization schema conflates marital status (single) and relationship status (unmarried and alone or unmarried and cohabiting). We treat these families as one form of family diversity with two subgroups, in part because researchers often examine children from these two subgroups in the

same studies, and also because of the fluidity with which unmarried parents dissolve and enter relationships make it logical to jointly consider these subgroups.

Among the most widespread changes in children's living arrangements in Western industrialized nations over the past 30 years have been the large increases in unmarried childbearing by single women and by unmarried cohabiting parents (Popenoe, 2009). By far the largest group of children living with a single parent (12% of the total number of U.S. children under 18) resides with a mother or a father who has never been married (U.S. Census Bureau, 2011). In the United States, about 40% of births are to unmarried mothers; the number of American children born to single mothers has tripled in 25 years (Martin et al., 2009), and increased by 800% since 1960 (Ventura, 2009). The proportion of unmarried births has increased even more in Australia and in several western European nations (Popenoe, 2009). The number of childbearing cohabitating unions also has dramatically risen. For instance, approximately 20% of American children were born to unmarried cohabiting parents at the start of the 21st century (Kennedy & Bumpass, 2008).

These demographic data indicate that marriage and childbearing have become disconnected for a substantial segment of the population. This decoupling has been due, in part, to declining economic and cultural incentives to marry and reduced stigma and social sanctions associated with unmarried parenthood (Ellwood & Jencks, 2004). In the United States, particularly among low-income individuals, marriage has taken on such symbolic importance as an achieved status that young adults postpone marriage, but not having children, until they feel they have reached certain economic and relationship standards (Edin & Kefalas, 2005). Consequently, unmarried parenthood is an emerging family form that is chosen most often by low-income individuals (Wu, 2008). These families are known as *fragile families*, in part because of the extreme instability of household membership among unmarried and cohabiting parent households, and in part because of an influential longitudinal U.S. research project known as the *Fragile Families and Child Well-Being Study* (<http://www.fragilefamilies.princeton.edu/>).

Although marriage and parenthood have become disconnected in most of the Western world, in Europe unmarried and cohabiting parents are far more likely than those in the United States to be middle class, well educated, and in stable unions (Allan, Hawker, & Crow, 2001). In this section we focus primarily on unmarried families in the United States.



### **Characteristics of Unmarried Mother and Unmarried Cohabitation Households**

Unmarried mothers who give birth, alone or within the context of cohabiting unions, are more likely than married mothers to be young, Hispanic or African American, and have lower levels of education (Kennedy & Bumpass, 2008; Wu, 2008). In general, single mothers and cohabiting parents more often live in poverty than do married parents (Kreider, 2008).

#### ***Households Headed by Single Parents***

Children born to unmarried mothers tend to reside with their mothers; nearly 80% of the American children who lived with one parent in 2004 lived with a single mother, and only 10% lived with a single father (Kreider, 2008). Given this unequal distribution, even in large national studies, the numbers of children in single father families are often too small to analyze. Consequently, less is known about children living with single fathers.

Although a greater percentage of unmarried mothers are delaying or avoiding marriage than in the past (Gibson-Davis, 2011), they do not lack romantic involvement with one or more partners. Determining how many partners single parents have had, however, is difficult. Cross-sectional designs often provide information only about the current relationship status of parents, and even longitudinal data sets seldom afford researchers the opportunities to assess parental relationship histories. One exception is the Fragile Families Study (FFS); Osborne and McLanahan (2007) examined the number of romantic partnerships new mothers had over a 3-year period. Unmarried mothers who lived apart from their children's biological fathers at birth were far more likely to have had relationship transitions than were married or cohabiting mothers, and to have substantially more relationships (Osborne & McLanahan, 2007). Over 20% of mothers who had visiting (noncohabiting) boyfriends when children were born, and 30% who were unpartnered at the child's birth, had three or more romantic relationships in the 3 years after giving birth. African American and Hispanic children experienced more maternal partnership transitions than European American children.

#### ***Cohabiting Parent Households***

Children in cohabiting parent households are about twice as likely as children of married parents to undergo a parental breakup, particularly at a young age (Manning, Smock, & Majumdar, 2004). Although European American

cohabiting parents who married each other increased the odds of family stability for children, Hispanic and African American cohabiting parents who married did not increase family stability (Manning et al., 2004). These ethnic differences may be related to economic resources. Married parents generally have greater economic resources than cohabiting parents, but marriage boosts economic resources for Hispanic and African American families less than for European Americans (Manning & Brown, 2006), which may reduce the protective effect or so-called marriage benefit them.

The instability of household membership in unmarried single and cohabiting parent households means more than frequent family transitions—it also means children have a much greater likelihood than those in married-parent households of having more complex families as a result of their parents' reproducing with multiple partners (Cancian, Meyer, & Cook, 2011). Multiple partner fertility is common among fragile families; 60% of children born to unmarried mothers have at least one half-sibling through either one or both parents (Cancian et al., 2011). The presence of half-siblings enhances the odds that household membership will fluctuate.

An estimated 46% of all U.S. children are expected to spend some of their childhood years in a household with a cohabiting mother and her partner (Kennedy & Bumpass, 2008), but this estimate includes cohabitating biological parents and stepparent-parent cohabitations. About half of the children in U.S. cohabiting households live with both of their biological parents (Kreider, 2008). The remaining half consists of children of divorced, bereaved, or never-married parents, almost always a mother, sharing a residence with the parent's romantic partner. Here we focus mainly on children living with unmarried biological parents (children in cohabiting stepfamilies are included in the stepfamily section of this chapter).

### **Child Outcomes: Children With Unmarried Mothers**

The research evidence is clear that unmarried parenthood and the multiple family transitions that often follow are related to poorer developmental well-being for children compared to children living with married parents (Waldfoegel, Craigie, & Brooks-Gunn, 2010). Children living with unmarried mothers are more at risk than children with married parents to perform poorly in school (Crosnoe & Wildsmith, 2011), to have mental health problems, and to exhibit internalizing and externalizing behavior problems (S. L. Brown & Rinelli, 2010). They also are more likely to

have sexual intercourse at younger ages than children born to married parents and to bear children outside of marriage themselves (Hognas & Carlson, 2012).

### **Child Outcomes: Children With Cohabiting Biological Parents**

Research on children living with their cohabiting biological parents is relatively meager, but in general, researchers have found that children living with two unmarried biological parents in cohabiting unions fare worse, on average, than children living with married parents (Artis, 2007; S. L. Brown, 2004, 2006; Gibson-Davis, 2008; Manning & Brown, 2006), and about the same as children in cohabiting stepfamilies (Artis, 2007; S. L. Brown, 2004, 2006; Dunifon & Kowaleski-Jones, 2002; Manning & Brown, 2006) and children living with a single mother (S. L. Brown, 2004). These family structure differences are widespread. For instance, S. L. Brown (2006) found that children in cohabiting families had more emotional and behavioral problems than children with married parents and had less motivation to do well in school. Children living with cohabiting parents are more at risk than children with married parents to be less physically healthy (Schmeer, 2011), to have more mental health problems (Artis, 2007; Waldfogel et al., 2010), to exhibit more internalizing and externalizing behavior problems (Hofferth, 2006; Schroeder, Osgood, & Oghia 2010), and to perform more poorly in school (Crosnoe & Wildsmith, 2011).

### **Explanatory Models**

Several theoretical perspectives have been used to explain why children living with unmarried and cohabiting biological parents fare worse than do children living with both married parents. These models focus on (a) economic resources, (b) parenting skills and parental effectiveness, (c) fathers' involvement, (d) family stability and change, and (e) selection.

#### ***Economic Resources***

Some of the differences in developmental outcomes between children with married and those with unmarried cohabiting parents are due to relative differences in financial resources, parental education, and related social capital available to married parents (Crosnoe & Wildsmith, 2011). Because household incomes are lower, unmarried parents have fewer resources of all kinds to invest in

their children (McLanahan, 1997). Parents may have to work longer hours outside the home to earn enough to survive, which gives them less time to monitor, check homework, play with, and socialize their children (Kendig & Bianchi, 2008). When at home, these parents, often tired from working at physically demanding, low-wage jobs, may have less energy for their childrearing responsibilities (Carlson & Corcoran, 2001).

Lower household incomes disadvantage children in many ways, from having fewer books, computers, and educational toys in their homes to living in poor-quality housing in dangerous neighborhoods and having to attend under-resourced public schools. Cohabiting biological parents are less likely to be employed than married parents, and when employed, their lower educational levels seldom allow them to earn as much as dual-earner married parents for the same number of working hours (Manning & Brown, 2003). They also are less likely to pool their incomes and spend money on children than are married couples (DeLeire & Kalil, 2005).

Resource management is difficult for low-income unmarried mothers and cohabiting parents. In addition to the challenges of trying to manage a household and maintain family members' health and well-being on limited incomes, for parents who have reproduced with multiple partners, decision making about resource allocations often becomes more complex. Parents may have to make difficult judgments about how to distribute their finite resources to multiple children in two or more households. Nonresidential fathers are less likely to support their children after mothers have reproduced with other men (Meyer & Cancian, 2012), which may result in even fewer resources available to children living with single or cohabiting mothers. In addition, nonresidential fathers provide less support for children over time, often because they have additional children to support with new partners (Meyer & Cancian, 2012). Although negative effects of unmarried parent families may be mostly attributed to poverty (Crosnoe & Wildsmith, 2011), there are other factors, many of which have to do with parents' effectiveness and involvement in rearing their children.

#### ***Parental Skills and Effectiveness***

It is more difficult for unmarried mothers and fathers to engage in effective parenting practices than it is for married parents—strains related to the lack of economic resources, poorer parental mental health, and coparental conflicts negatively affect unmarried parents' effectiveness at raising children (Cavanagh & Huston, 2006). Unmarried and

cohabiting parents are less likely than married parents to engage in authoritative parenting practices and more likely to be either punitive or detached parents (Waldfoegel et al., 2010). When they do practice authoritative parenting, however, their children do better in school and exhibit fewer behavioral problems than children in cohabiting households with less-warm parents who set fewer rules (Dunifon & Kowaleski-Jones, 2002).

Living in poverty is stressful, and stress affects parents' mental health (S. L. Brown, 2004). There is evidence that single and cohabiting mothers are more likely to be depressed than mothers in other family structures (S. L. Brown, 2004). Because they may be less effective parents than mothers who are not depressed, their children's needs may not be met (Klausli & Owen, 2009). Parental anxiety also interferes with how effectively parents interact with their children (Carlson & Corcoran, 2001). Evidence from the Fragile Families Study indicates that partner instability increases mothers' and fathers' anxiety, particularly after a relationship transition (Waldfoegel et al., 2010).

How well unmarried coparents cooperate, particularly when making decisions about children, is predictive of children's well-being (Klausli & Owen, 2009). Coparental conflicts are harmful to children's emotional well-being (Cummings & Davies, 2002), and unmarried mothers' relationships with dating or "visiting" partners and unmarried cohabiting parents' relationships are less cooperative and more conflicted than married parents' relationships (S. L. Brown & Booth, 1996). There also may be indirect benefits for children when parents' romantic relationships are of higher quality—satisfaction with partner relationships may enhance parenting effectiveness and reduce household stress, which consequently benefits children (Waldfoegel et al., 2010). Having a partner or coparent may allow parents to monitor, supervise, and be more involved with children than when they are the sole parent (Demuth & Brown, 2004). Single mothers, but not mothers in cohabiting couples, spend less time with their children than do married mothers (Kendig & Bianchi, 2008).

### **Fathers' Involvement**

Given the economic and other resource deficits experienced by most unmarried mothers and by many cohabiting parents, the possibility that greater father involvement in childrearing would be related to benefits for children's well-being makes sense theoretically (King, 2009). Involved fathers potentially make additional resources available to children and augment their care by mothers. Greater investment of father's time and economic resources

in parenting should enhance children's well-being (Waldfoegel et al., 2010). Conversely, father involvement harms children if (a) fathers do not share economic resources with children, (b) they drain household assets rather than add to them, (c) they physically abuse children, mothers, or both, or (d) they have mental health issues or substance abuse problems (King & Sobolewski, 2006). When non-residential fathers are actively engaged with children and have close ties to them, children's well-being is enhanced (Amato & Gilbreth, 1999; King, 2009; King & Sobolewski, 2006). Secure attachment between children and nonresidential fathers can help children adapt to changes in family structure (Schroeder et al., 2010). King and Sobolewski (2006) found that strong relational ties to nonresidential fathers were related to children having fewer behavioral problems and making better grades, but weak ties to fathers were related to more behavioral problems unless the children were close to their mothers. Being close to mothers was almost as positive for children's well-being as being close to both parents. Being close to fathers only was helpful, but not as helpful as close maternal ties.

Involvement in childrearing by residential biological fathers has also been found to be positively related to children's well-being in unmarried cohabiting families (L. M. Berger, Carlson, Bzostek, & Osborne, 2008; Carlson, 2006). Residential fathers' effects are greater than those of nonresidential fathers (Carlson, 2006). Involvement by residential stepfathers, often called *social fathers* in the research on children of unmarried parents, can also benefit children's development (Bzostek, 2008), but the inclusion of a new romantic partner in an unmarried parent household complicates childrearing (Carlson, 2006). For instance, nonresidential fathers often reduce involvement with their children when a social father starts living with them (King, 2009; Meyer & Cancian, 2012). Nonresidential fathers and social fathers have been known to "swap" children (Furstenberg, 1995). That is, they parent the children they live with but reduce or cut ties with their biological children living elsewhere. Mothers encourage social fathers to assume parental responsibilities for their children (Burton & Hardaway, 2012), making a point to select men who are willing to do so (Tach, Mincy, & Edin, 2010). The net effects on children of these complex mother-father-child relationships are not entirely clear. Much more research is needed on the effects of multiple parent-figures, particularly multiple father figures, on children living with unmarried parents.

Finally, a study by Hawkins, Amato, and King (2007) has called into question the direction of effects of father

involvement and adolescent well-being. Their study, using nationally representative longitudinal data from the Add Health data set, did not support a nonresidential father-effects model; instead, levels of adolescent well-being influenced how involved fathers were in their children's lives. This child-effects model indicated that adolescents' problem behaviors caused fathers to disengage, rather than fathers' engagement contributing to better adolescent behavior. These effects should be examined with other data sets and with children from other family structures.

### *Family Stability and Change*

Given the greater instability of unmarried and cohabiting parent households, deconstructing the effects of family instability from family structure effects is difficult (Wald-fogel et al., 2010). Most researchers have reported that greater instability in parental romantic relationships or in household membership are related to greater negative effects on children's development (e.g., Cavanagh & Huston, 2006; Osborne & McLanahan, 2007). There is evidence that it may not be the number, but the types of family transitions children experience that is developmentally relevant (Manning et al., 2004). For example, in one study the dissolution of cohabiting unions was less harmful for children than divorce (Wu, Hou, & Schimmele, 2008).

In general, losing a parent's presence in the home is more stressful for children than living with one parent only (Liu & Heiland, 2012). Not all studies, however, have reported worse outcomes for children transitioning from cohabiting two-parent to one-parent households (S. L. Brown, 2006; Schmeer, 2011; Schroeder et al., 2010). Transitions that result in the absence of a disruptive household member may enhance children's development rather than harm them (S. L. Brown, 2006). Conversely, the addition of an involved stepparent who brings social capital and other resources into the family may be a benefit that results in better developmental outcomes for children. Consequently, gaining a stepparent in the household can either negatively or positively affect children's well-being and behavior (S. L. Brown, 2006; Schroeder et al., 2010).

The effects of household transitions vary somewhat by ethnicity (see McBride et al., Chapter, 11, this *Handbook*, this volume). Osborne and McLanahan (2007) reported that partnership instability negatively affected Hispanics more than European American children, and Fomby and Cherlin (2007) reported that changes in parents' cohabitation status were related to increased behavioral problems for European American, but not African American children. Being reared

by an unmarried parent may be harder on European American children than African American and Hispanic children (Dunifon & Kowaleski-Jones, 2002). These ethnic differences in transition effects may be related to cultural variations in the extent to which community supports unmarried parenthood (Fomby & Estacion, 2011).

Nock (1995), borrowing a concept Cherlin (1978) applied initially to remarried stepfamilies, called cohabiting families incomplete institutions that lacked broad cultural and societal support, which made family life more stressful and, therefore, more prone to conflicts and dissolutions. The meanings attached to dissolution of nonmarital unions or the creation of a nonmarital stepfamily may differ for family members belonging to different ethnic communities (Fomby & Estacion, 2011). More research is needed on how ethnicity mediates family transitions and family structure effects.

### *Selection Effects*

Selection effects refer to observed and unobserved influences on children, parents, and families that differ from first-marriage families as the standard and that also may affect children's development. These preexisting characteristics or attributes may obscure effects on children due to family structure. Thanks to analytic strategies that allow for more careful examinations of possible selection effects, such as fixed effects analytic models and difference-in-difference approaches (Berger et al., 2008; Meyer & Cancian, 2012), and statistical matching models (Liu & Heiland, 2012), more researchers are addressing selection effects. Fixed effects analytic models, in which invariant characteristics of children and families are statistically removed in an attempt to control for unobserved differences, have been used to control for selection effects. Unfortunately, these approaches cannot identify specifically the unobserved differences between family types if selection effects are found, and they can lead to somewhat different results within the same investigation (Meyer & Cancian, 2012).

Potential selection effects in the study of children with unmarried and cohabiting parents include parental values and beliefs about childrearing, marriage, and family life that may differ from parents in other family structures. Motivations to enhance children's educational attainment and knowledge about healthy childrearing practices may vary as a consequence of parental education, age, income, and neighborhood resources (Kowaleski-Jones & Dunifon, 2006). Ethnicity also may be related to preexisting conditions that affect parents and children from diverse family



structures in different ways (e.g., Fomby & Estacion 2011; Kowaleski-Jones & Dunifon, 2006).

### *Interventions With Unmarried and Cohabiting Parents*

Findings related to children's outcomes when parents are single or cohabiting have led to concentrated efforts to enhance children's well-being by changing their parents' marital status (Acs, 2007) and by teaching couple and coparenting skills to low-income unmarried parents (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). Although a focus on teaching parental skill building is not new, the U.S. Healthy Marriage Initiative, started under George W. Bush and continued by President Obama, has been a policy initiative that funneled millions of federal dollars into training programs for low-income unmarried parents (Wood et al., 2010). In general, there is little evidence that such educational interventions improve parents' skills long-term or that children indirectly benefit from such parent education efforts (Wood et al., 2010). Similarly, programs designed to enhance fathers' engagement with their children and with coparents have not consistently yielded affirming results (Wood et al., 2010). Unfortunately, most interventions with unmarried parents have not been carefully evaluated with control groups and sound measurements, so interpretation of the findings from this body of work has been challenging.

### *Methodological Concerns*

Reviewing research on the well-being of children who live with an unmarried parent is challenging for two reasons. First, in many studies it is not clear who is included in the category of "children with unmarried parents." Some study samples include children and adolescents living with divorced or bereaved single parents as well as never-married parents. Despite sharing the social address of living with a single parent, these children have had quite different life courses. Unless researchers deconstruct the category of single-parent families into subtypes for analyses, it is likely that the category of single-parent families in some studies is not homogeneous. There are ways to analyze data to either statistically control or to examine differences between types of unmarried parent households (e.g., fixed effects analytic strategies), but not all researchers have employed such strategies.

A second challenge is related to the relationship instability of unmarried mothers and fathers—cross-sectional study designs can miss children's transitions into and out of various types of two-adult household configurations. It is possible for researchers to assess these transitions in

longitudinal studies, but if data collection periods are far apart, and survey questions do not account for transitions between time periods, some transitions may be missed.

Child well-being differences between married and cohabiting parent households sometimes disappear when controls are added (e.g., Manning & Brown, 2006; Wu et al., 2008). For instance, Manning and Brown (2006) found that marriage benefited European American children more than children of color. Artis (2007) found that without statistical controls, children of married parents exhibited greater well-being (i.e., school performance, sadness/loneliness, and self-control) than children in cohabiting biological and stepfamilies, but with economic resources, maternal depressive symptoms, and parenting practices added to statistical models as controls, family structure differences were found only in reading skills. In most studies of children's development in unmarried cohabiting households, however, structural differences between family types remained after controls were added.

### *Summary of Research on Children in Unmarried and Cohabiting Households*

There is consensus that well-being is lower for children living with unmarried or cohabiting parents, compared to those residing with married parents. These outcomes are likely due primarily to the harmful effects of poverty and family transitions, both phenomena predictive of negative outcomes for children (see Acs, 2007). Poverty and household transitions are stressful for family members, and parenting quality and engagement are diminished by them and by related environmental conditions (e.g., relocations, work hours, dangerous neighborhoods). There is growing evidence that specific aspects of family transitions affect children—relationship quality, who leaves and enters the household, whether resources are added or subtracted from the children's household, the developmental timing of transitions, and frequency of changes. There is widespread concern about improving the well-being of parents and children in low-income unmarried and cohabiting families, but interventions generally have not been effective.

## **BEREAVED CHILDREN**

Approximately 4% of U.S. children under the age of 18 live with a widowed parent (U.S. Census Bureau, 2011). The death of a parent is among the most stressful experiences a child can have (Yamamoto et al., 1996). It permanently

disrupts a significant attachment relationship and, consequently, may have profound effects on children's sense of identity and security. There is a long, substantial body of research establishing bereaved children's vulnerabilities to a multitude of negative consequences, including grief (Melhem, Porta, Shamseddeen, Payne, & Brent, 2011), emotional and psychological distress (Silverman & Worden, 1992), depression (Cerel, Fristad, Verducci, Well, & Weller, 2006; Melhem et al., 2011), separation anxiety (Lin, Sandler, Ayers, Wolchik, & Luecken, 2004), delinquent and criminal behavior (Draper & Hancock, 2011; Wilcox et al., 2010), alcohol and substance abuse (Brent, Melhem, Donohoe, & Walker, 2009), other health-compromising behaviors (Wilcox et al., 2010), and changes in identity and self-esteem (Brent et al., 2009). Although most children do not develop clinical symptoms following parental death (Kaplow, Layne, Pynoos, Cohen, & Lieberman, 2012), or continue to suffer serious long-term negative effects (Luecken & Roubinov, 2012), the loss of a parent is a profound, life-changing experience, often accompanied by other changes in children's lives (e.g., relocations, changes in routines, loss of parental support, financial deprivations). It is not surprising that the research focus has been on negative child outcomes.

### *Cause of Death and Outcomes*

For most children and adolescents, parental death is an unexpected life course event. Findings are mixed as to whether the negative effects are more intense and longer lasting when parental death is anticipated (e.g., terminal illness), or when the demise is sudden (e.g., suicide, violent death, accident). Some evidence suggests unexpected death trauma is greater for children than anticipated loss of life (Brent et al., 2009; Cerel, Fristad, Weller, & Weller 1999, 2000), but not all researchers found child effects differences due to suddenness of the fatality (A. C. Brown, Sandler, Tein, Liu, & Haine, 2007); some found longer anticipations of death were related to poorer child adjustments (Saldinger, Cain, Kalter, & Lohnes, 1999).

Several studies have focused exclusively on children whose parents committed suicide (Wilcox et al., 2010). Suicide is described as a "confusing death" (Cerel, Jordan, & Duberstein, 2008, p. 39) because of assorted reactions of family members and the wider community. Suicide is stigmatized in Western societies, which results in less social support from outsiders than other bereaved individuals; social network members feel awkward and unsure about how to offer emotional support. Family members also may try to keep the cause of death a secret due

to feelings of shame (Cerel et al., 2008). A propensity for children to blame themselves and other family members for suicide has been noted by researchers, and following suicide there may be more interpersonal conflicts, less clear communication, and less mutual support within families throughout the grieving process than after parental death by other causes (Cerel et al., 2008; Ratnarajah & Schofield, 2007). Premorbid family dynamics and the mental health of family members may distinguish these families from other bereaved families, and these potential premorbid differences have implications for children's grieving and adjusting (Cerel et al., 1999, 2000). Others have argued, however, that "pre-suicide and post-suicide family functioning that are either protective or risk factors for [child] adverse outcomes are simply unknown" (Cerel et al., 2008, p. 41).

### *Demographic Predictors*

In addition to cause of death, numerous other child or family demographic characteristics have been examined as predictors of post-bereavement risk and vulnerability, such as age and sex of children and family income. These variables have not been found to consistently predict children's reactions to parental mortality.

### *Theories of Child Bereavement*

Although several theories have been proposed to explain family bereavement processes (Rothaupt & Becker, 2007), they ignore developmental differences between adults and children in cognitive understanding of death, emotional maturity, identity, and other intrapersonal phenomena that likely affect grieving processes. Research on bereaved children suggests that their grieving processes are different from adults' due to cognitive differences in how death is understood and experienced (Kaplow et al., 2012). For example, effects of unexpected death on children are less clear than effects on adults, who fare worse than children (Kaplow et al., 2012).

Most studies on childhood bereavement have not been explicitly framed from a theoretical perspective. The common assumption of virtually all researchers, however, that parental death is traumatic and stressful for children lends itself to the widespread use of risk and resilience perspectives. A few studies have been based on attachment theory, and there have been grounded theory studies on bereavement, examining how parents may assist children in remembering the deceased parent (Nickman, Silverman, & Normand, 1998).

### ***Risk and Resilience Perspectives***

Among scholars using a risk and resilience framework there is general recognition that studying children's outcomes in response to parental death without considering family functioning, community effects (sociocultural and environmental mediators), and intrapersonal mediators (e.g., constructing meaning from the death) is inefficient (see Masten et al., Chapter 18, this *Handbook*, this volume; Ratnarajah & Schofield, 2007). Family functioning variables include the quality of family relationships prior to parental death (Cerel et al., 2008), interactions between the surviving parent and child (Haine, Wolchik, Sandler, Millsap, & Ayers, 2006), the mental health (Kalter et al., 2002) and adjustment to loss of the surviving parent and that parent's abilities to maintain family routines and meet children's needs (Caughy, Huang, & Lima, 2009). Family stressors such as parental substance abuse, domestic violence, and marital separations also are seen as relevant to understanding children's adjustment to parental death (Gray, Weller, Firstad, & Weller, 2011). Community system supports such as support groups and grief counseling are seen as relevant considerations (Cerel et al., 2008). How children cognitively and emotionally process a parent's death is relevant (Ratnarajah & Schofield, 2007; Shear & Skritskaya, 2012).

Based on a review and critique of the childhood bereavement literature, Luecken and Roubinov (2012) proposed a risk and resilience model of how the stress of parental death disrupts children's biological regulatory systems and increases the risk of long-term physical health problems. In this model, parental death affects the distal risk and protective factors of parent-child relationship quality, along with caregiver mental health and other negative life events that often co-occur with parental death. These factors in turn affect children's self-esteem, self-efficacy, and social relations. The effects of these distal factors on long-term physical and mental health are mediated by children's threat perception and appraisal, emotion regulation, emotional reactivity, and biological stress reactions. Parts, but not all, of this model have been examined by researchers (Luecken & Roubinov, 2012).

### ***Research Limitations and Challenges in Studying Bereaved Children***

Studying bereaved children is challenging. Death is a sensitive and emotionally charged topic, and there are ethical concerns about studying bereaved children and surviving parents, which creates methodological limitations.

First, the research often has been characterized by small convenience samples, which lowers statistical power and reduces researchers' ability to generalize findings (Luecken & Roubinov, 2012). Samples of bereaved children are hard to obtain, so researchers usually rely on newspaper ads, obituaries in newspapers, funeral homes, and clinical rosters from hospitals and clinics to obtain samples (Cerel et al., 2006; Gray et al., 2011). It is often impossible to determine how representative such samples are, and the frequent overreliance on clinical groups confounds multiple risk factors (Kaplow et al., 2012). There are exceptions, such as Draper and Hancock's (2011) use of the U.K. National Child Development data set and Wilcox et al.'s (2010) use of national registers in Sweden, but most are convenience samples.

Small samples lead to problems—for instance, seldom included are enough children from ethnic minority groups to allow researchers to examine possible cultural differences in how grief and loss are experienced (see Bornstein, Jager, & Putnick, in press, for a review of sampling problems in developmental science). Because samples of children of different ages are too small to examine separately, researchers' have limited abilities to compare grief and adjustment to parental mortality across developmental periods.

Although longitudinal designs are rare (for exceptions see Cerel et al., 1999; Melhem, Moritz, Walker, Shear, & Brent, 2007; Sandler et al., 1992), a consensus has formed among researchers that the normative course of grieving and recovery from parental death is a period of acute sadness and distress, followed by a gradual return to healthy functioning without evidence of impairment (Luecken & Roubinov, 2012). Little is known, however, about the effects of later transitions in family structure (e.g., parental remarriage, cohabitation) on children and the cumulative effects of bereavement and other family changes. Furthermore, without developmental evidence from well-controlled longitudinal studies that include appropriate comparison groups, researchers are challenged to distinguish between normative grief reactions and clinically significant prolonged psychological and social maladjustment and complicated grief (Kaplow et al., 2012). Across studies, about 5% to 10% of children develop clinically defined problems over time as a result of parental death (Kaplow et al., 2012). More research is needed to delineate the predictors of adaptive and complicated grief.

Since researchers have focused predominately on negative outcomes for children, we know little about positive responses to parental mortality. Researchers rarely

examine the possibility of children experiencing long-term positive outcomes after parental death (for an exception see Wolchik, Coxe, Tein, Sandler, & Ayers, 2008). Biological stress responses are seldom measured (Luecken & Roubinov, 2012). Expansion of the types of outcomes measured would yield a more complete picture of children's grieving processes.

Comparison groups also have been problematic. Some studies had no comparison groups, or comparison groups were obtained via convenience sampling. Often, the samples have been a mixture of community-based (from schools, churches, community groups) and clinically identified children (e.g., depressed children at a university clinic), or nonbereaved children, a group much larger and more demographically diverse than the target group of bereaved children. As in many studies of children in diverse families, the appropriateness of the comparison groups depends on the research questions being addressed. In many studies of bereaved children, the comparison group was children living with both parents, with the only difference between groups being parent mortality.

Finally, with few exceptions (e.g., Nickman et al., 1998), intervention studies have not been conducted on effective ways of assisting children to cope with parental death. The Family Bereavement Program has been one of the few to investigate interventions with bereaved children. Using an experimental design, 244 children and caregivers from 156 families participated in 12 sessions of family activities and small group activities designed to enhance positive coping strategies, reducing negative thoughts, and communicating to children that caregivers and others understood their grief and other feelings (Sandler et al., 1992). Short-term and longer-term (11 months) follow-ups indicated benefits to children from participating. Another study from this team found that posttraumatic growth was positively related to active coping, seeking support from surviving parents, threat appraisals, and internalizing and externalizing problems (Wolchik et al., 2008).

### ***Summary of Bereaved Children***

Empirical evidence from the past two decades on children in postbereavement single-parent families has been generated primarily from three projects: The Family Bereavement Program (A. C. Brown et al., 2007; Sandler et al., 1992; Wolchik et al., 2008), the Grief Research Study (Cerel et al., 1999, 2000, 2006; Gray et al., 2011) and the Impact of Parental Death Study on Children (Brent et al., 2009; Hamdan et al., 2012; Melhem et al., 2011). The preponderance of evidence is that children adapt to

this loss over time and surviving parents' coping helps children adjust (Nickman et al., 1998), but more research is needed on the mechanisms by which parents and other caregivers can assist children in mourning.

## **CHILDREN IN SINGLE-PARENT FAMILIES AFTER DIVORCE**

Divorce rates in the United States reached a peak (5.2 divorces per 1,000 population) in the 1970s, and then leveled off to around 3.6 divorces per 1,000 population, where it remains (U.S. Census Bureau, 2011). In 2011, over 5 million children lived with a divorced single mother, and approximately 1.2 million lived with a divorced single father (U.S. Census Bureau, 2011). Because so many children are affected by parental divorce, it has been studied extensively, with nearly 2,000 articles listing divorce as a key topic published since 2000 (Amato, 2010).

### **The Effects of Divorce on Children**

Children of divorced single parents are most often compared in studies to children in continuously married nuclear families, often utilizing large national datasets (e.g., National Longitudinal Study of Youth, National Survey of Families and Households). Effect sizes from these studies are often small, and longitudinal studies have found that the majority of children in postdivorce families do well over time (Amato, 2010). Research on the effects of divorce on children in the United States has continually shown, however, that children with divorced parents compared to children with continuously married parents do less well on social, emotional, behavioral, academic, and health outcomes. For example, children whose parents divorced are more aggressive (Osborne & McLanahan, 2007), engage in more antisocial behavior (Strohschein, 2005), are more prone to delinquency (Videon, 2002) and depression (S. L. Brown, 2006), are less socially engaged (S. L. Brown, 2006), have lower cognitive achievement (Fomby & Cherlin, 2007), and have poorer psychological well-being compared to children with married parents (Amato & Sobolewski, 2001). The most consistent divorce effects are externalizing behavior problems and lower-quality relationships with non-residential fathers (Lansford, 2009).

### **Theories Used to Explain Divorce Effects**

Although feminist theory, attachment theory, attribution theory, symbolic interactionism, family systems theories,



life course perspectives, and social capital models have been employed, most researchers have relied on stress and coping models to explain divorce effects on children (Amato, 2010). The process of divorce is stressful for all family members and involves multiple changes, such as declines in parental economic and emotional support, lack of adequate parental monitoring, loss of time spent with parents (especially nonresidential parents, usually fathers), conflicts between parents, and poor parental adjustments to separation and divorce (Amato, 2010; Sandler, Miles, Cookston, & Braver, 2008). Researchers have focused on transition effects, coparental functioning, and parent-child relationships.

### **Transitions**

Courts in North America and Europe often award joint physical custody to divorcing parents (Emery, 2011), so many children in “single parent households” actually reside part-time concurrently with both biological parents. Periodic changes in household membership due to custody arrangements are accompanied often by new parental partnerships and other household changes (Ganong & Coleman, 2004). More family structure transitions are positively related to greater internalizing and externalizing problems (Osborne & McLanahan, 2007).

### **Coparental Cooperation**

How parents negotiate new roles as nonromantic coparents may affect how children adjust following divorce. Qualitative and small quantitative studies suggest parents who either cooperate or coparent in a business-like fashion experience better child outcomes than disengaged or hostile divorced coparents (Ahrons, 2006). Not all studies agree, however; Amato, Kane, and James (2011) reported little evidence that cooperative coparenting buffered children from the negative effects of divorce on well-being or academic achievement. Study design differences might account for some discrepancies in findings, but more research is needed on the effects of postdivorce coparenting on children.

There is agreement, however, that coparental conflict increases negative outcomes for children (Emery, 2011; Fabricius & Luecken, 2007), and children in joint-custody arrangements whose parents report high conflict experience more psychological problems than do children in sole-custody arrangements (Lee, 2002). Conflict may mediate the relations between divorce and children’s internalizing and externalizing behaviors and interpersonal problems (Amato, 2005).

### **Parent-Child Relationship Quality**

Researchers have generally found that parent-child relationship quality is related to children’s negative internalizing and externalizing behavior (Amato & Sobolewski, 2001; Sandler et al., 2008). Children whose postdivorce relationships with both parents are close exhibit fewer problem behaviors and have higher self-esteem than when one or both parental relationships are not close (Amato & Sobolewski, 2001).

### **Nonresidential Fathers**

Findings from studies in the United States and Europe on fathers’ roles in children’s adjustment postdivorce have been mixed. Some suggest father involvement enhances children’s adjustment (Amato et al., 2011), others find father involvement not related or negatively related to child adjustment (Kalil, Mogstad, Rege, & Votruba, 2011). Father involvement quality appears to be more important than contact time in predicting positive child outcomes (Amato & Gilbreth, 1999). Overall, when divorced nonresidential fathers actively engage with children there are increased positive outcomes and less negative internalizing and externalizing behaviors, as well as delinquency (Amato & Gilbreth, 1999; Sarkadi, Kristiansson, Oberklaid, & Bremberg, 2008). When fathers do not engage in authoritative parenting practices, however, increased contact with them may be detrimental to children’s well-being (Amato & Gilbreth, 1999), particularly among low-income urban youth, who engage in more delinquent behavior when fathers are in contact more (Coley & Medeiros, 2007).

### **Selection Effects and Preexisting Conditions**

To isolate the influence of divorce on children’s outcomes, researchers have investigated selection effects and effects of preexisting conditions, factors that might have differentiated children from divorced families from children in first-marriage families prior to the divorce. Several longitudinal studies have found that increases in negative externalizing (acting out, aggression) and internalizing (depression, anxiety) behaviors often begin to appear as early as 8 to 12 years before parental separation, implying that parents may not avoid negative effects on children by staying together (Furstenberg & Kiernan, 2001; Robbers et al., 2011). Possibly preexisting effects are exacerbated by anxieties that arise during the process of parental separation or divorce. Sun and Li (2002), using pooled time-series models to evaluate data from the National Education Longitudinal Study (NELS), found that children

whose parents divorced had a U-shaped pattern in their academic aspirations, self-esteem, and locus of control compared to peers in continuously married families, with the dip in children's outcomes evident three years before, and a return to higher levels beginning roughly three years after, parents' legal divorce. These findings indicate that some negative outcomes associated with divorce may become exaggerated around the time of the legal divorce but dissipate after children adjust to new family patterns and roles. Such a pattern of effects could explain the disparity sometimes found in fixed effect models attempting to account for selection effects because the possibility that time since parental divorce (or separation) has a curvilinear relationship with child adjustment is unaccounted for in most models (Amato, 2010; Sun & Li, 2002). In some studies using fixed effect models, no associations were found between children whose parents have divorced and those whose parents have been continually married, although others suggested causal impacts of divorce on children (Amato, 2010). Few studies have used fixed effects models, however.

### ***Processes, Moderators, and Mediators of Divorce Effects***

Increasingly, researchers have explored mediators of the relations between divorce and childhood outcomes in attempts to identify factors that differentiate between children who eventually adjust to postdivorce family life and those who do not. Much of this research has focused on how parents manage the coparenting transition after divorce and how parent-child relationship quality and contact, in particular between children and nonresidential fathers, affects child outcomes. There also have been investigations into children's age at divorce (Amato, 2005), exposure to parental conflict (Amato, 2005; Emery, 2011), and the parents' physical or substance abuse (Cummings & Davies, 2002) as mediators and moderators of the links between divorce and child well-being.

### ***Age at Divorce, Sex, and Ethnicity***

Studies have been mixed regarding the effects of divorce timing on children. Infants and toddlers have little understanding of divorce; it is the disappearance of a parent that makes them insecure and anxious (Lamb & Kelly, 2009). There have been concerns among scholars that infants and toddlers may be unable to form secure attachments with caregivers after parental divorce (Emery, 2011), although evidence is mixed. Children generally benefit from being allowed to develop a secure base, while having brief but frequent contacts with nonresidential parents (Emery, 2011;

Pruett, Ebling, & Insabella, 2004), but researchers comparing attachment among children from divorced families with those in continuously married families have seldom found differences in rates of secure attachment (Hamilton, 2000). Though very young children lack the capacity to articulate adjusting to divorce transitions, they may still experience loss and confusion regarding family changes (Clarke-Stewart & Brentano, 2006). Some researchers have concluded that younger children have more difficulty adapting to divorce because they lack cognitive capacity to understand it or to access outside resources to help them cope (Hetherington, 1999). Other researchers, however, have found that risk related to parental divorce escalates with older children (Chase-Lansdale, Cherlin, & Kiernan, 1995). Lansford et al. (2006) found that children whose parents divorced when they were in kindergarten to fifth grade had more internalizing and externalizing symptoms and poorer grades when they were in Grades 6 to 10. Parenting behaviors are more important to children's adjustment to divorce, however, than is age. Although results of studies vary, there are no consistent sex differences related to divorce (Kelly, 2012). Similarly, findings regarding ethnic differences in children's responses to parental divorce are inconsistent, and few studies have examined if there are ethnic differences (Amato, 2010).

### ***Interventions to Support Children Following Parental Divorce***

In the United States, most intervention programs designed to support children and parents following divorce have been initiated by the courts. Typical intervention goals are to enhance coparenting, reduce conflicts, and lower relitigation rates (Wolchik et al., 2002). Few interventions have been evaluated carefully, so effects are often unclear, although a few well-designed intervention studies have shown promise in maintaining and strengthening mother-child relationships, consequently reducing children's mental health problems and externalizing behaviors (Wolchik et al., 2002), and enhancing cooperative coparenting skills, thereby contributing to improved child well-being (Sandler et al., 2008; Sullivan, Ward, & Deutsch, 2010).

### ***Summary***

Although research on divorce effects generally continues to be informed by early characterizations of these children as "troubled, drifting, and underachieving" (Wallerstein, 1991, p. 353), significant progress has been made toward more nuanced understandings of divorce as a complex

process in the lives of children and adults. Early research designs were characterized by simple comparisons between children in nuclear families and those whose parents divorced. Over time, stepchildren, children in cohabiting families, and other groups were included as comparisons, controls were added, and data were explored for mediators and moderators of divorce effects on children. Large representative data sets combined with qualitative and mixed methods designs contributed to a better grasp of the effects of the divorce process on children.

Amato (2010, p. 658) argued “researchers should focus less attention on mean differences between children with divorced and continuously married parents and more attention on the factors that produce variability in children’s adjustment following divorce.” With increased focus on the role of stress, risks and resilience, the effects of multiple transitions, preexisting conditions, and potential moderators or mediators on children’s adjustment to divorce, researchers are better able to understand how divorce affects children and what differentiates those who adjust from those who continue to struggle. Recently, more attention has been paid to selection factors and genetic effects, and longitudinal studies of children pre- and postparental divorce are contributing to clearer, more sophisticated models of divorce effects on children. Although genetically informed designs that explore genetic influences on children’s responses to divorce (e.g., studying offspring of twins and adopted children) have been inconclusive, “future research on gene x environment interactions may help explain why some children are vulnerable and other children are resilient in response to parental divorce” (Amato, 2010, p. 654). Finally, better evaluation of interventions and preventative programs meant to ease the adjustment process of children of divorce are evolving.

## EFFECTS OF STEPFAMILY LIVING ON CHILDREN

In the early 1970s, the most frequent precursor to stepfamily formation in the United States changed from bereavement to divorce (Ganong & Coleman, 2004). Previously, stepparents often were seen as substitutes or replacements for a deceased parent, and stepfamily households typically resembled first-marriage households (i.e., two adults, one of each sex, and one or more children, all residing together under one roof). It gradually became obvious, however, that postdivorce stepfamilies were qualitatively different from postbereavement stepfamilies. Roles in these stepfamilies

were often ambiguous, as were stepparents’ relationships with stepchildren, and clinicians noted that adults and children often struggled to adjust (Ganong & Coleman, 2004).

### *Demographics of Stepchildren*

A child becomes a stepchild when a parent marries or cohabits with a person who is not the child’s other parent. The new partner becomes a stepparent to the child. Accurate demographic data on U.S. stepfamilies have become hard to obtain, but reasonable estimates from Europe (Steinbach, 2008), North America (Kreider, 2008), and Australia (Forster-Jones, 2007) are that 10% to 20% of minor age children live in households with a parent and a stepparent. An estimated one-third of U.S. children will spend at least some of their childhood living with a stepparent (Bumpass, Raley, & Sweet, 1995), and 47% of Americans in a national survey (Parker, 2011) reported having a close step-relative (e.g., stepparent, stepchild). Demographics generally underestimate the numbers of stepchildren because they assess stepchildren in stepparent households only. Stepchildren who reside primarily with a single parent but also have a nonresidential stepparent are not included in demographic statistics of stepchildren, such as those collected by the U.S. Census Bureau.

Because most contemporary stepfamilies are formed after parents’ divorce or the dissolution of cohabiting parents, it is possible that children can have two stepparents concurrently if both biological parents repartner, but there are no reliable estimates of this phenomenon. Given that the divorce rate for remarriages in the United States is higher than that of first marriages (Teachman, 2008), and that about 10% of marriages are third or higher remarriages for at least one spouse (National Center for Health Statistics, 1993), it is probable that some stepchildren have had a series of stepparents throughout their childhood years (Monte, 2011). Increased fertility among cohabiting adults and what has become known as *multiple partner fertility* also have led to increased numbers of children being reared by a series of stepparents in cohabiting stepfamilies (Carlson & Furstenberg, 2006).

### *Stepfamily Structural Complexity*

Stepfamilies are structurally diverse. The simplest stepfamily household structure is when one of the adults is a stepparent to the child or children in residence. *Simple stepfamily households* are most often stepfather households because mothers typically have primary physical custody of children (Kreider, 2008). *Complex stepfamily households*, sometimes called *blended households*, are

those in which both adults are stepparents to each other's children from prior unions. Blended stepfamilies also may contain children from the current union, creating half-sibling relationships (Gennetian, 2005).

When the entire network of stepfamily relationships is considered, and not just the stepparent household, there can be at least 30 structural configurations based on the residence of children from prior unions of both adults and whether or not the adults have reproduced in the new union (Ganong & Coleman, 2004). These structural variations create problems for researchers because it takes enormous samples to be able to examine potential differences in children's development between the diverse varieties of stepfamily structures. Perhaps because of problems in obtaining adequate samples to examine all types of stepfamilies, researchers generally have focused on stephouseholds only (for exceptions, see Amato & Keith, 1991; King & Sobolewski, 2006), and have limited distinctions between simple or complex households, or to whether they contain a stepfather, a stepmother, or both (Ganong & Coleman, 2004). Unless samples are large, researchers often limit studies to stepfather households.

The complexity is exacerbated when variable custody arrangements mean that stepfamily households gain and lose children on a weekly (or other) basis, as some children leave stepparent households to spend time with their other parent while children who primarily reside elsewhere enter the stepparent household to spend time (Ganong & Coleman, 2004). It is feasible, for example, for a simple stepfather household to become a complex household during summers or on alternative weekends when the stepfather's biological or adopted children spend time in the household. In other words, stepchildren in simple stepfamily households may actually be part of a complex stepfamily, with siblings, half-siblings, or stepsiblings living some or most of the time elsewhere (Ganong & Coleman, 2004).

Adding to this complexity is the diversity of sibling relationships stepchildren may experience (Gennetian, 2005; Halpern-Meekin & Tach, 2008). Stepchildren may have many combinations of stepsiblings, half-siblings, and full siblings. Stepsiblings are children of a stepparent, half-siblings are children with whom a child shares only one parent; some half-siblings may be products of the current parental union or they may be the offspring of one parent's prior unions. In a study based on the U.S. National Longitudinal Study of Adolescent Health data set, 15% of the respondents had half-siblings, almost 3%

had stepsiblings, and 1% had both half-and stepsiblings (Tillman, 2008).

### *Stepchildren and Family Transitions*

Most stepchildren have experienced multiple family structures before acquiring a stepparent. For example, most stepchildren lived in a single-parent household before becoming a stepchild, and many initially resided with both of their parents in a married or cohabiting household prior to living in a single-parent household. In addition, some stepchildren were born to single, never-married parents who later repartnered or wed a person who was not the child's other parent. The three major pathways to becoming a stepchild—(1) the dissolution of biogenetic parents' relationships, (2) the death of one parent, (3) and the repartnering of never-married parents—are important in understanding familial contexts of stepchildren and previous family transitions they have experienced (Sweeney, 2007). There is evidence that stepchildren's well-being is negatively related to the number and type of previous family structure transitions they have experienced (Cavanagh & Huston, 2006; Sweeney, 2007). It is likely that the reasons for structural transitions are relevant for understanding stepchildren's development (Monte, 2011).

### *Stepchildren's Outcomes*

Researchers concerned about stepchildren's development generally compare stepchildren to children living with both biological parents and to those living with only one parent (Coleman, Ganong, & Fine, 2000). Less common have been comparisons to children living in other types of families such as adopted children or children living with neither parent (exceptions include Laubjerg, Christensen, & Petersson, 2009). A few researchers have compared children in cohabiting stepfamilies to those in remarried stepfamilies (Raley, Frisco, & Wildsmith, 2005). Also uncommon have been within-group studies of changes over time for stepchildren (Shriner, Mullis, & Schlee, 2009).

Although a few studies have reported no differences between stepchildren and children from other family structures (Wen, 2008), stepchildren generally have been found to fare more poorly than children living with both of their parents. Although the effect sizes of these differences have been small (Amato, 1994), they have been consistent. In general, stepchildren's outcomes have been similar to children living with a single parent (Ginther & Pollak, 2004). On average, stepchildren achieve less well than children living with both parents in academic performance



(Tillman, 2008) and completed schooling (Wojtkiewicz & Holtzman, 2011). Dropout rates may be due to stepchildren leaving home to cohabit (Goldscheider & Goldscheider, 1998) and marry (Aquilino, 1991).

Compared to children in nuclear families, stepchildren on average have been found to exhibit more internalizing behavior problems, such as depression (Barrett & Turner, 2006) and emotional problems (Hanson, McLanahan, & Thomson, 1996; Laubjerg et al., 2009). Adolescent stepchildren generally have displayed more externalizing behavioral problems than children living with both parents, such as using drugs, alcohol, and tobacco (Brown & Rinelli, 2010), engaging in sexual behaviors (Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999), nonmarital childbearing (Astone & Washington, 1994), and engaging in illegal, delinquent, or aggressive behaviors (Kowaleski-Jones, 2000).

Findings about sex differences in stepchildren's reactions to stepfamily living have been mixed, although more studies report sex differences in stepchildren's developmental outcomes (e.g., Benson & Johnson, 2009; Mandara, Rogers, & Zinbarg, 2011), than do not (Gunnore & Hetherington, 2004). Girls appear to have more difficulty adjusting than do boys (Ganong & Coleman, 2004). Similarly, indications are that stepmothers have a harder time raising stepchildren than do stepfathers (Schrodt, 2008), but some have found no differences between children residing with stepmothers and those residing with stepfathers (Demuth & Brown, 2004).

The increase in cohabitating stepfamilies worldwide has triggered a few studies comparing stepchildren in remarried and cohabiting stephouseholds. Findings are mixed; children in cohabiting stepfamilies and those in remarried households have similar developmental outcomes (S. L. Brown, 2004), except in school performance, where children with remarried stepparents do better (Raley et al., 2005). No differences have been found in well-being of children living in cohabiting stepparent households and cohabiting two-biological parent households (Artis, 2007; Dunifon & Kowaleski-Jones, 2002). Complicating comparisons, at least in the United States, are socioeconomic and ethnic differences between cohabiting and married stepfamilies (Manning & Brown, 2006). Much of the U.S. research on cohabiting stepparents and stepchildren has been limited to families in poverty, which complicates comparisons to married stepfamilies.

Despite hundreds of published studies, researchers continue to raise questions about stepfamily effects on children. For these researchers, intrigued by generally

small effect sizes (Amato, 1994) and the fact that most stepchildren (75–80%) fare well after parental remarriage (Hetherington & Kelly, 2002), the persistent questions have become, “What variables mediate the effects of stepfamily living on children?” and “What individual, interpersonal, and contextual (social) factors contribute to stepchildren's development?” These questions cannot be addressed with study designs that simply compare stepchildren to children from other family structures, and so stepfamily scholars have used increasingly elaborate designs. Quantitative studies have become more sophisticated, with increasing efforts to statistically control for unobserved factors that may bias the association between family structure and children's outcomes through the use of fixed effects methods (Sweeney, 2010). Considerations of stepfamily structures have become more complex as well, with more attention to the influences of various types of siblings on children's development (Gennetian, 2005). Increased numbers of qualitative studies also have enhanced the understanding of stepchildren's lived experiences and the family processes that affect them (Baxter, Braithwaite, & Bryant, 2006; Ganong, Coleman, & Jamison, 2011), such as how stepparents develop close ties with stepchildren (Ganong, Coleman, Fine, & Martin, 1999) and the contexts under which stepchildren respond to stepparents (Ganong et al., 2011).

## **Theoretical Explanations for Stepparent Effects on Stepchildren**

### ***Stress Effects***

The negative consequences of family and individual stress are at the core of several explanatory models of stepfamily effects on children. These models have generally focused on the stressful effects of family structural changes on children and economic demands. Stress effects on children's development related to poor quality or conflicted interpersonal relationships have been examined, but we discuss them as family process effects.

### ***Structural Change and Family Instability***

The *change and instability* perspective proposes that the multiple changes experienced by children as their families undergo structural transitions lead to impaired cognitive and academic performance (Tillman, 2008), internalizing and externalizing problem behaviors (Barrett & Turner, 2006; Cavanagh & Huston, 2006; Sweeney, 2007), and more distant relationships with parents and other family

members (DeLongis & Preece, 2002). Parental remarriage or cohabitation often results in many changes for children, such as moving to a new residence, perhaps changing schools, adapting to new household members, and facing new household routines and rules (Ganong & Coleman, 2004). Children frequently have fewer contacts with non-residential parents after either parent repartners (Ganong, Coleman, & McCaulley, 2012), which is often experienced as a loss by children. Most stepchildren experience multiple structural transitions in their families, and researchers have found support for a *cumulative effects hypothesis* that as parental marital and relational disruptions increase, family members' stress escalates, causing children to exhibit more internalizing and externalizing problems (Martinez & Forgatch, 2002).

### ***Economic Stressors***

Another stress-related explanation is the *economic deprivation hypothesis*, which proposes that stepchildren are disadvantaged compared to children living with both parents because of economic hardships experienced living in a single-parent household before entering a stepfamily household (Manning & Brown, 2006). Although parental remarriage generally brings household incomes close to that of first-marriage households, the financial problems and conditions that accompany poverty, such as inadequate schools, dangerous neighborhoods, and parents working long hours may have already been experienced. Evidence supporting the economic deprivation hypothesis has been mixed; when researchers control for differences in household income or socioeconomic status, stepfamily effects are sometimes but not always attenuated (Heard, Gorman, & Kapinus, 2008; Hoffmann & Johnson, 1998; Pong, 1997), and although stepparents often increase household income, they may be financially supporting biological children living elsewhere, so they bring demands on the stepfamily's resources as well as assets.

### ***Family Processes Effects***

Another set of explanations focuses on the effects of stepchildren's relationships with stepparents and biological parents. Most family process explanations emphasize (a) parenting and stepparenting behaviors, the dimensions of warmth and control, (b) stepparent involvement in childrearing (c) the quality of parent-child and step-relationships, and (d) direct and indirect effects of other family relationships on stepchildren, particularly marital and coparental conflicts, nonresidential parent-child relationships, and half-and stepsiblings.

Some researchers have speculated that stepchildren have more problems than other children because they receive inadequate parenting and adult support (Carlson, 2006). Parents' abilities to competently rear their children may be compromised because they are investing time and energy in building relationships with new partners rather than in childrearing (Hoffman & Johnson, 1998). Support for this *reduced social capital model* has been found in studies of academic achievement (Pong, 1997) and behavior problems (Carlson, 2006; Kim, Hetherington, & Reiss, 1999). Parental stress also contributes to compromised parenting: parents who cannot monitor children's behavior, participate in school activities, or interact with children at levels they did prior to remarriage or cohabiting (Phythian, Keane, & Krull, 2008).

Researchers have hypothesized that stephousehold adults were more controlling and less warm than bioparents in two-parent households, thereby placing stepchildren at greater risk for problems. There is evidence of more authoritarian parenting in stepfamily households than in nuclear families (Benson & Johnson, 2009), but not all investigators have found differences in parenting style (Bulcroft, Carmody, & Bulcroft, 1998).

In general, researchers have found that stepparents spend less time with and are less involved than parents (e.g., Hofferth & Anderson, 2003). The main explanations for this come from economic models and evolutionary psychology. The *social capital model* states that stepparents invest their time and energy on the repartnered couple's shared relationship or on children from prior unions rather than on stepchildren (e.g., Gorman & Braverman, 2008). From evolutionary scholars, the *parental investment/parental discrimination proposition* that stepparents invest little in their stepchildren because they are not genetically related, discriminating in favor of their genetic offspring, has received some research support (e.g., Schnettler & Steinbach, 2011). Evolutionary theory and parental discrimination also have been employed to explain stepchild abuse. Children in households with nonrelated adults, particularly stepfathers, mothers' boyfriends, and other men, have been found to be at greater risk for sexual abuse (Margolin, 1992) and physical abuse (Daly & Wilson, 1996) than children living in households with parents only.

However, not all researchers have found reduced investment in stepchildren by stepfathers (Bulcroft et al., 1998). In fact, the *added adult hypothesis*, that stepchildren benefit when stepparents are engaged with stepchildren in positive ways, also has received support from researchers

(e.g., Bulcroft et al., 1998; Sweeney, 2007). When stepfathers demonstrated to stepchildren that they matter to them, internalizing and externalizing behavior problems are reduced (Schnettler & Steinbach, 2011); when stepparents spend more time with stepchildren, step-relationships are closer and children benefit emotionally (Schenck et al., 2009; Schrodt, Soliz, & Braithwaite, 2008).

Other potential explanations for why stepparent involvement in childrearing has been more limited than residential parents' involvement include the following: (a) stepfathers may find it hard to break into tightly knit mother-child systems because both mothers and children work to keep them at a distance (Bray & Kelly, 1998), (b) some mothers want romantic partners but not coparents and may discourage childrearing involvement by stepfathers (Ganong et al., 2012; Weaver & Coleman, 2010), and (c) nonresidential parents may discourage active involvement by stepparents out of jealousy and fears that they might be supplanted by the stepparent in their children's lives. Stepchildren's reactions to stepparents' efforts to engage have been found relevant for stepparent involvement; stepchildren reject stepparents who engage in discipline and control early in the relationship (Bray & Kelly, 1998; Ganong et al., 1999).

### ***Quality of Parent-Child and Stepparent-Stepchild Relationships***

Children who maintain close emotional ties with residential (Planitz, Feeney, & Peterson, 2009) and nonresidential (Schenck et al., 2009) parents have better developmental outcomes than children whose bonds are less close after parental remarriage. Stepchildren also benefit when parents let stepchildren and stepparents bond (King, 2006).

Although many stepchildren have affectionate and close relationships with stepparents (Ganong et al., 2011), not all do. Stepchildren generally are less close to stepparents than to parents (Heard et al., 2008; Schnettler & Steinbach, 2011). Stepparents who intentionally try to develop positive relationships by engaging in friendship-developing actions and who maintain those behaviors over time have warmer, closer bonds with stepchildren than other stepparents (Ganong et al., 1999). A key may be stepchildren recognizing and reciprocating stepparents' affinity-seeking efforts (Ganong et al., 1999; O'Connor, Hetherington, & Clingempeel, 1997).

Conflicts between stepparents and stepchildren may be a source of stress that affects child development (Klaus, Nauck, & Steinbach, 2012). Step-relationships are characterized by more disagreements than are parent-child relationships, particularly when stepchildren

are adolescents (Barber & Lyons, 1994). Even when positive stepparent-stepchild relationships are established when children are preadolescents, conflicts may arise when children get older (Hetherington, 1993). Higher rates of early home leaving by stepchildren have been attributed to stepchild-stepparent conflicts (Heard et al., 2008).

### ***Marital and Coparental Relationships***

*Coparental conflicts* between children's biological parents and conflicts between bioparents and stepparents negatively affect behavioral and psychological outcomes for stepchildren (Feinberg, Kan, & Hetherington, 2007). Coparental conflicts affect children more in stepfamilies than in nuclear families (e.g., Hanson et al., 1996), which may result from these conflicts escalating into triadic processes that include children (Baxter et al., 2006; Weaver & Coleman, 2010). Loyalty conflicts, disputes involving coparents and a child or a parent-stepparent-child triad, have been found to affect stepchildren's sense of well-being (Baxter et al., 2006). Stepchildren are placed "in the middle" of these emotionally tinged struggles between adults, which is stressful, and harmful to their emotional and psychological development (DeLongis & Preece, 2002).

### ***Stepsiblings and Half-Siblings***

The presence of stepsiblings and half-siblings may negatively affect stepchildren's development (Gennetian, 2005; Tillman, 2008). When there are half- and stepsiblings, stepfamily dynamics become more complex and parental resources are spread thinner than in simple stepfamilies.

### ***Selection Effects***

There is some support for the selection argument that differences between stepchildren and children living with both parents are due to individual or familial factors that predated parental remarriage or cohabitation (Cavanagh & Huston, 2006; Hawkins et al., 2007). Although scholars have used fixed effects models and other statistical techniques to control for unmeasured preexisting factors the results suggest "both socialization and selection processes matter" (Cavanagh & Huston, 2006, p. 576).

### ***Summary of Research on Stepchildren***

Research on stepchildren has become increasingly sophisticated methodologically and theoretically (Sweeney, 2010). Large national data sets or large representative samples in the United States and Europe have allowed researchers to better assess demographic characteristics of

stepchildren and their families and to examine variables that might mediate or moderate the effects of living with a stepparent, such as socioeconomic status, age when the step-relationship began, coparental conflicts, relationship quality, and the sexes of stepparents and stepchildren. There is some research consensus that stepchildren's well-being is partly a function of closeness to residential parents and stepparents, coparental conflicts, and stepfamily financial status. The employment of fixed effects analytic strategies has helped researchers unpack selection factors from the effects of family structure and family process (Sweeney, 2010), but qualitative studies also are being done, resulting in greater insights into family dynamics and providing a complement to quantitative investigations. For instance, stepparents and stepchildren's efforts at relationship building with each other contribute to positive relationships and children's emotional well-being, as do high stepparent warmth and limited efforts to discipline.

## CHILDREN REARED BY GAY AND LESBIAN PARENTS

For many years, the prevalence of children reared by parents in gay and lesbian relationships was a matter of speculation. Reliable data were difficult to obtain because of stigma against gays and lesbians in some communities, and the serious negative consequences for adults identified as homosexuals in those communities made gay and lesbian parents and their children reluctant to identify themselves in surveys (van Dam, 2004). In some countries, however, it is now possible to determine if a household is headed by couples in a same-sex relationship and if there are children under the age of 18 in the household who belong to at least one of the adults by birth, marriage, or adoption (Gates & Cook, 2011; Rosenfeld, 2010). In the United States in 2010, 646,464 same-sex-couple households were identified, and of these, 17% had children residing with them (Gates & Cook, 2011). An estimated 1% to 12% of children in the United States have a gay or lesbian parent, and one in five gay men are raising children (Gates & Cook, 2011). Gay couples are more likely than opposite-sex couples to have a nonrelated child in their households, often an adopted child (Krivickas & Lofquist, 2011). Although demographic estimates of households headed by gay or lesbian couples have improved, the numbers of children with gay or lesbian parents are likely higher than reported. The U.S. Census does not assess the number of children whose nonresidential parents are in same-sex relationships, and it is impossible from

the U.S. Census to determine the number of single-parent households headed by gay or lesbian parents.

## Diversity Among Gay and Lesbian Families

Families of children who have gay and lesbian parents are structurally diverse (Patterson, 2009), partly due to the variety of ways in which gay and lesbian individuals become parents: (a) reproduction in a previous heterosexual relationship before "coming out," (b) adoption, (c) donor insemination, or (d) employing surrogates. The pathways to becoming parents are relevant to understanding children's development in these families because they differ on critical variables, including (a) presence or absence of a biological parent living elsewhere, (b) physical custody of children, (c) parents' and coparents' legal rights and responsibilities, (d) number of adults claiming some type of parental status, and (e) motivation to become parents or to rear children. These pathways also differ in the degree to which parenthood was planned; gays and lesbians who adopt, employ in-vitro fertilization, or use a surrogate to bear a child for them generally do so after having acknowledged their sexual orientations. They are referred to by researchers as having *planned* to rear children (e.g., Chan, Raboy, & Patterson, 1998). In contrast, homosexual parents who reproduced in marriages or other heterosexual relationships prior to coming out may have planned to have children, but not to rear them as a gay or lesbian parent (Lynch, 2004; Moore, 2008).

Demographic data on gays' and lesbians' trajectories to parenthood are nonexistent, although researchers contend that most homosexual parents reproduced in prior marriages or cohabiting relationships (Moore, 2008). Sex differences exist in the extent to which homosexual men and women select pathways to parenthood; fewer gay men than women adopt, and lesbians are more likely than gay men to become parents via assisted reproductive technology (Stacey & Biblarz, 2001). There also are sex differences in the technology employed, with lesbians using in-vitro fertilization with donated sperm or sperm banks (Vanfraussen, Ponjaert-Kristofferson, & Brewaeys, 2003), and gay men more likely employing surrogates.

## Raising Children Born in Previous Heterosexual Relationships

Children whose gay or lesbian parents reproduced in heterosexual relationships before coming out may (a) reside in households headed by a single parent, (b) reside in households headed by a parent and his or her "new"



same-sex partner, or (c) spend time in the households of both biological parents (Lynch, 2004). It is likely, given beliefs about the best interests of children after parents dissolve relationships, that most children will have contact with both parents (Hequembourg, 2004). In the United States, parents are increasingly awarded shared legal custody and physical custody (Emery, 2011), which means that both parents are involved in making decisions about children and that children will spend time in both parents' households. This arrangement is substantively different from familial contexts of children residing full-time with same-sex comothers or cofathers, or with single gay or lesbian parents (Hequembourg, 2004; Lynch, 2000).

### *Single Homosexual Parents After Dissolution*

Little is known about children being reared by single gay or lesbian parents after dissolution of a heterosexual union (Biblarz & Stacey, 2010). Because of small samples these children often are included in the same category for data analysis with children of partnered gay and lesbian parents.

### *Gay and Lesbian Stepfamilies*

When gay and lesbian parents who bore children in prior heterosexual unions remarry or repartner, they create what may be called *gay and lesbian stepfamilies* (Hequembourg, 2004; Lynch, 2004; Moore, 2008). They meet the definition of stepfamilies (i.e., one or both parents have a child from a previous union; Ganong & Coleman, 2004), and many family dynamics in these families resemble heterosexual stepfamilies more closely than they do planned gay and lesbian families (Moore, 2008; van Dam, 2004). For example, children in gay and lesbian stepfamilies may feel closer to biological parents than to stepparents, may spend time in two households (i.e., mom's house, dad's house), and may have three or more adult caregivers (biological parents and stepparents) who interact with them in these households (Lynch, 2004; Moore, 2008).

Many lesbian and gay stepfamilies, however, do not define themselves as stepfamilies, preferring instead to think of themselves as similar to married heterosexual families (Lynch, 2000). In addition, unrelated comothers and cofathers often see themselves as equal parents rather than as stepparents (Lynch, 2000). The view that same-sex stepfamily households are just another form of nuclear family household may be a feasible coconstruction of family realities if children are very young when the household is formed and if they have no contact with their other biogenetic parent. For older children, and for children with at least some contact with nonresidential parents, however,

this view may be less realistic. For older children and those with contact with both biogenetic parents, emotional bonds with biological parents tend to be stronger than bonds to stepparents (Moore, 2008).

In stepparent same-sex households, children usually make clear distinctions between their relationships with their biological parent and the other household adult (Moore, 2008; van Dam, 2004), in contrast to gay and lesbian couples who adopt a child together, have surrogates, or reproduce via in-vitro fertilization (IVF). In most of those families, both adults simultaneously become coparents of the child and may have more equal relationship statuses and histories with the child than in gay and lesbian stepfamilies.

Most children in gay or lesbian stepfamily households have a biogenetic parent living elsewhere, which affects children (see the section on stepchildren in this chapter for a lengthier explanation of these family dynamics) who may be involved with three or four parental figures and may spend time in two households. This aspect of family life has been ignored in research on children whose parents are in same-sex relationships. Virtually all the research has been on family members in the household, not the broader family units.

Nonresidential parents can affect same-sex coparents, and parents' homosexual orientation has been the focus of custody battles (Patterson, 2009). Fear of legal reprisals by angry former spouses has contributed to tendencies for children not to disclose a parent's homosexuality, the keeping of secrets, and parent-child coalitions against the straight parent (Goldberg, 2007a, 2007b; van Dam, 2004). Little is known about how these family dynamics affect children.

Stepparents or "social," nonbiogenetic parents in gay and lesbian stepfamilies cannot legally make decisions about children's education, health care, or other areas of a child's life in which legal guardianship status is relevant (Shapiro, Peterson, & Stewart, 2009), and although second-parent adoption is an option for homosexual stepparents, in most, but not all, legal jurisdictions (Meezan & Rauch, 2005) it is relatively rare, partly because of biases against gays and lesbians and the presumed damages that would be inflicted on a child (Crowl, Ahn, & Baker, 2008). Second-parent adoption by homosexual adults may be more common in some European nations (e.g., Spain, United Kingdom), Canada, New Zealand, and Australia.

Planned homosexual parenthood typically requires effort, time, and expense. Assisted reproductive technologies (ART) can be costly. Couples who use ART are older, wealthier, and have fewer children than other parents

(Tasker, 2010). Adoption also is expensive and adoptive parents must undergo rigorous reviews.

The challenges involved in becoming a homosexual parent are relevant to children's well-being. It is probable that gays and lesbians who adopt or use ART to become parents are highly motivated to rear children, and they may have advantages in raising children compared to the general population of heterosexual parents, who often become pregnant without planning.

### **Children's Developmental Outcomes in Gay and Lesbian Families**

There is widespread agreement by most scholars that children of gay and lesbian parents are similar to children of married parents on nearly all developmental outcomes (Biblarz & Stacey, 2010). An APA commission concluded: "Research suggest(s) that the development, adjustment, and well-being of children with lesbian and gay parents does not differ markedly from that of children with heterosexual parents" (<http://www.apa.org/about/policy/parenting.aspx>). Sociologists have asserted that there is a "rare degree of consensus that unmarried lesbian parents are raising children who develop at least as well as their counterparts with married heterosexual parents" (Biblarz & Stacey, 2010, p. 5).

Most researchers have framed studies from either a resilience perspective or have made efforts to not assume a priori that children in heterosexual, two-parent families will fare better than children reared by gays and lesbians (Biblarz & Stacey, 2010; Goldberg, 2007a, 2007b). They have pointed out potential advantages of children reared by homosexual parents, such as potentially greater motivations to rear children compared to heterosexual parents (Biblarz & Stacey, 2010; Tasker, 2010). Researchers also have speculated that children of lesbians may benefit from a "double-dose" of mothering (Biblarz & Stacey, 2010; Crowl et al., 2008).

#### ***No Differences***

Studies of children's cognitive development (Crowl et al., 2008), school performance (Rosenfeld, 2010), psychological adjustment and well-being (Brewaeys, Ponjaert, van Hall, & Golombok, 1997; Chan et al., 1998; Gartrell & Bos, 2010; Wainright, Russell, & Patterson, 2004), externalizing behaviors (Bos, van Balen, & van den Boom, 2007; Wainright & Patterson, 2008), and social relationships (Chan et al., 1998) generally have reported that children of gay and lesbian parents fare as well developmentally

as children living with both biological parents. Most researchers reported that family processes such as parental warmth (Wainright et al., 2004), interparental conflict (Chan et al., 1998), or coparental satisfaction (Bos et al., 2007) were more important to children's well-being and development than parents' sexual orientation.

#### ***Differences in Sexual Identity and Parent-Child Relationships***

Some researchers have reported small differences between children reared by gay and lesbian parents and those reared by heterosexual parents in sexual identity and behavior and in parent-child relationships (Crowl et al., 2008). Children reared by lesbian mothers were more likely to have flexible attitudes and self-perceptions about sexual identity compared to children with heterosexual parents (Goldberg, 2007a; MacCallum & Golombok, 2004). Although these findings are not uniform across all studies (Brewaeys et al., 1997 and Golombok et al., 2003 found no differences in sex identity), they are worth examining.

Tasker and Golombok (1997), in a longitudinal study, found no differences between sons reared by lesbians and by heterosexual mothers, but daughters were more likely to have engaged in or considered a same-sex relationship. A Dutch study had similar findings; no differences in sexual identity for sons but lower heterosexual identity for daughters of lesbians than for daughters of heterosexual couples (Bos et al., 2007). Biblarz and Stacey (2010) speculated that it was not mothers' sexual orientation but the absence of fathers in the lives of children of planned lesbian mothers that contributed to the greater flexibility in sexual attitudes and identities. Without fathers, children had less pressure to conform to sexual stereotypes and cultural norms (Biblarz & Stacey, 2010). The lack of information about children of gay fathers makes drawing conclusions difficult, but there is evidence that gay fathers encourage less gendered identities in their children (Bigner, 1999) similarly to lesbian mothers (Berkowitz & Ryan, 2011).

Not all studies report differences in parenting or parent-child relations by family type, but when they do, differences tend to support more positive relationships with lesbian mothers than between children and heterosexual mothers and fathers. Compared to heterosexual parents, lesbian mothers use less corporal punishment (Golombok et al., 2003), have fewer disputes with children (Golombok, Tasker, & Murray, 1997), show greater warmth and affection (Bos et al., 2007; MacCallum & Golombok, 2004), exhibit more positive parenting skills such as concern, problem-solving, availability (Bos et al., 2007; Brewaeys

et al., 1997), share parental responsibilities among coparents (Bos et al., 2007; Patterson, Sutfin, & Fulcher, 2004), engage in play and shared interests with children (Golombok et al., 2003; MacCallum & Golombok, 2004), and enforce less strict conformity to sex norms (Golombok et al., 2003). Researchers have tended to attribute these findings to children benefiting from having two mothers (e.g., Crowl et al., 2008).

Most studies on children in same-sex parent households have been of children with lesbian comothers. The few investigations of coparenting gay fathers suggest that two men raising children function more like two women than they do a man and a woman (Mallon, 2004; Stacey, 2006). It is risky to make inferences about similarities and differences, however, because there are so few studies comparing gay and lesbian parenting.

### **Research Methods on Children Reared by Gay and Lesbian Parents**

Despite general consensus on findings, research on children in gay and lesbian families has been criticized for study design problems, mostly centering on sampling strategies, the appropriateness of comparison groups, measurement issues, and other methodological shortcomings. Critics contend that research designs are so seriously flawed that no valid conclusions may be drawn about children's developmental outcomes (Regnerus, 2012a; Schumm, 2012). Both critics and proponents often recognize similar study limitations but differ in the implications these limitations have for validity of findings. In the background of this debate lie moral and religious values about homosexuality.

#### ***Sampling and Samples***

Both critics (Regnerus, 2012a) and scholars sympathetic to the challenges of gay and lesbian families (e.g., Wainright et al., 2004), have pointed out that most studies of children's development are characterized by small samples of lesbians and less often of gay men and their children, that are obtained through convenience or snowball sampling methods. Small samples lack adequate statistical power to determine statistically significant differences between children with gay and lesbian parents and other groups of children, so Type II errors may occur. Small samples are less challenging for qualitative researchers (Zanghellini, 2007), yet most work on children with homosexual parents has been quantitative (Biblarz & Stacey, 2010).

Another problem with small samples is representativeness. Drawing random samples of children in gay and lesbian families is expensive because such families are

relatively rare. Even with large samples, subsets of children with gay and lesbian parents may be too small for statistical analysis (Wainright et al., 2004). Users of secondary data often have to rely on multiple questions to determine how many adults are in the home, the relationship status of those adults, and sometimes the types of relationships the adults have with the children or with a focal child in the household. It should be noted that in studies drawn from secondary data sets, single gay or lesbian parents are not identified and neither are nonresidential gay and lesbian parents.

The stigma associated with being gay or lesbian, which in some communities is heightened when the individual is a parent (Berger, 2000), is challenging for researchers. Gay and lesbian parents are often reluctant to identify themselves to researchers, fearing negative consequences of exposing their children and themselves by doing so (e.g., discrimination, threats). Consequently, researchers have employed a variety of ways to seek participants through gay and lesbian social networks and organizations, by recruiting participants from businesses that serve gay and lesbian clientele, by advertising in media outlets that target gays and lesbians, and via word of mouth (e.g., Berkowitz & Ryan, 2011; Goldberg, 2007a; van Dam, 2004). As a result of nonrepresentative sampling methods, however, it is often difficult or impossible to determine how close these convenience samples resemble the population of gay and lesbian parents and their children. Samples of homosexual parents tend to be primarily female, European American, middle-class, and urban (Biblarz & Stacey, 2010). Gay fathers are undersampled, probably because lesbian mothers are more likely than gay fathers to have children in their homes and are more willing to participate in family research than are men. There is evidence from Rosenfeld's (2010) study of parents drawn from the U.S. Census that samples of same-sex couples in most U.S. studies are less economically and ethnically diverse than the general population of American same-sex-couple households. Critics contend that convenience sampling selects gay and lesbian parents with above-average abilities and resources that mask the kinds of problems children might have in the general population of homosexual parents (Regnerus, 2012b; Schumm, 2012).

#### ***Comparison Groups***

Most studies of children of gay and lesbian parents have compared them to married heterosexual parents or to other two-parent households. Biblarz and Stacey (2010; Stacey & Biblarz, 2001) argued that few study designs allowed researchers to differentiate the effects of parents'

sexual orientation from a number of other potentially relevant effects, such as number of parents, their marital status, their sex, and their relationship to children (genetic or social parents). These five variables—parental sex, number and marital status of parents, parental sexual orientation, and biogenetic relationships between parent and child—interact with children’s development in complex ways, and yet are difficult to discern because they are conflated by most study designs (Biblarz & Stacey, 2010). Consequently, it is difficult to tease out developmental outcomes due to sexual orientation of parents from these conflated potential effects.

Tasker (2010) also has pointed out the necessity to control for “methods of conception” when comparing children of gay and lesbian parents to larger groups of children with heterosexual parents. A common problem is that the larger comparison groups may contain more diverse families. A solution has been to match comparison groups, but there are limits to the number of variables by which families, children, and parents can be matched, and matching reduces the ecological validity of study designs.

### **Measurement Issues**

One main measurement challenge with this body of literature has been in operationalizing sexual orientation of parents. For example, Regnerus (2012a) used questions about parents’ sexual or relational behavior asked of offspring: “From when you were born until you were 18 (or until you left home on your own), did either of your parents ever have a romantic relationship with someone of the same sex?” Others have relied on respondents’ self-identified status as lesbian (e.g., Bos et al., 2007) or gay (Berkowitz & Ryan, 2011). Some scholars have pointed out that sexual orientation may not be categorical (Zanghellini, 2007), and others argue that there are qualitative differences in the experiences of children whose parent *ever* had a same-sex relationship and those who have only known life with two mothers or two fathers (Gates et al., 2012).

### **Data Collection Methods**

Most studies have been based on self-reported data from parents, although there have been exceptions where children completed self-reports (e.g., Wainright et al., 2004) or were interviewed in qualitative studies (Goldberg, 2007a, 2007b). Reliance on parental self-report is potentially a critical issue; reviewers have concluded that parent-child relationships were significantly better in same-sex families than in heterosexual families when parents were reporting but not when children were reporters (Crowl et al., 2008;

Tasker, 2010). Given the social stigma associated with same-sex unions, it might be understandable if social desirability affected gay and lesbian parents’ responses to questions about how well their children were developing. Children also might be somewhat defensive or unwilling to openly talk about their parents, reflecting interpersonal strategies learned in families existing at the margins of society (Goldberg, 2007b).

There have been a few studies in which observational data were collected (e.g., Bos et al., 2007), and a few qualitative studies (e.g., Berkowitz & Ryan, 2011; Goldberg, 2007a, 2007b). Scholars have called for more qualitative work and a shift in research paradigms from scientific positivism to recognition of the importance of qualitatively understanding family processes effects on children in gay and lesbian families (Berkowitz, 2009; Zanghellini, 2007).

### **Few Longitudinal Studies**

There have been only a few longitudinal studies, all of lesbian parents and their children; the U.S. National Lesbian Longitudinal Family Study (NLLFS) has followed 84 planned lesbian families over five waves of data collection (e.g., Gartrell et al., 1996; Gartrell, Bos, & Goldberg, 2012), a small sample of children of lesbians in the United Kingdom has been followed into adulthood (e.g., MacCallum & Golombok, 2004; Tasker & Golombok, 1997), and there is a small Belgium study of planned lesbian parenthood (Brewaeys et al., 1997; Vanfraussen et al., 2003). None of these longitudinal projects had representative samples, but all had comparison groups of heterosexual parents, matched for specific family characteristics. The fact that these studies are from different cultures and from essentially the same historical cohort allow for some cross-cultural comparisons (Bos et al., 2007), and all have shown that children in planned lesbian families were similar to children from heterosexual families.

### **Gaps in the Research Literature on Children With Gay and Lesbian Parents**

There are several lacunae in research about children reared by gay and lesbian parents. Perhaps the most serious shortcoming is the small number of studies of gay fathers (Regnerus, 2012a). Lesbian parents who have children via donor insemination and gay men who employ surrogates provide a sort of natural experiment by which researchers could study the effects of parental sex as well as sexual orientation. There have been few studies about the effects of legal unions for same-sex parents and the attendant social and policy-related advantages of such institutionalized



support on children. There is some cross-national evidence that legal unions affect parents' sense of well-being (Shapiro et al., 2009), and other cross-cultural work that suggests legal issues may affect how lesbian parents thought about sperm donor involvement (Ryan-Flood, 2005) and thus has implications for raising children. Little is known, however, about the effects on children of being reared in married homosexual households. Changes in laws and public policy in the United States and elsewhere should make it easier for researchers to examine these potential effects on children's development.

### **Theory**

Most studies of children of lesbian and gay parents have been informed by psychological developmental theories such as social learning and cognitive development theory, but many studies seem to be atheoretical. Developmental theories appear in studies of children's sexual identity, sexual orientation, and gender development. Scholars have called for studies using queer theory and other conceptual frameworks oriented toward gay and lesbian life (Berkowitz, 2009). Queer theory is a constructivist approach that questions the binary categorization of humans as heterosexual and homosexual; the focus in queer theory is heteronormativity, the belief that heterosexuality is normative and should be supported by societal institutions, with other orientations seen as deviant and problematic (Berkowitz, 2009)

### **Summary**

Most studies find the well-being of children of gay and lesbian parents to be comparable to children living with married parents, and greater than children in other family structures. Critics of these studies cite numerous methodological problems to discount the entire body of work. It is difficult to disentangle politics and values from developmental science when evaluating research on children with gay and lesbian parents.

## **Politics and Values in the Study of Children of Gay and Lesbian Parents**

### **Politics**

The study of children of gay and lesbian parents is an undertaking with high political stakes. In some countries policy makers and politicians have turned to social and behavioral science scholarship to bolster their beliefs about homosexuality, marriage, and parenthood (Meezan & Rauch, 2005). More than do most areas of developmental

and family study, scholarship on the effects of gay and lesbian parenthood on children appears to reflect the personal values of researchers.

Although the U.S. Supreme Court decided that the federal government must recognize same-sex marriages, numerous states prohibit adoption by homosexuals and deny them parental rights on the grounds that homosexual parenting is not in children's best interests. Although there is an international trend to legally recognize the rights of gay and lesbian parents (e.g., Canada, Spain, France, The Netherlands), the issue of gay and lesbian parenthood continues to be an ideological battleground (Goldberg, 2007b). Attempts to explore how the presence or absence of legal ties affect homosexual parents and their children have been rare (see Biblarz & Stacey, 2010), but this may be a subject of increasing interest to researchers.

### **Nonepistemic Values**

Beliefs about the innate benefits of children being reared by a married mother and a father appear to be a cornerstone of the nonepistemic values of the critics of gay and lesbian parenthood. This value presumes that "mothering and fathering involve gender-exclusive capacities" (Biblarz & Stacey, 2010, p. 4). Children missing one of the sex influences are seen to be at a developmental disadvantage. The "essential father" is another nonepistemic value that affects research on fatherless children from a variety of family structures (Biblarz & Stacey, 2010). The essential father belief is that fathers provide masculine role modeling benefits for the development of sex role identities for sons and for daughters, and that fathers are the primary disciplinarians, so without a father's guidance and limit setting, children struggle with a variety of developmental and behavioral challenges. This is an aspect of heteronormativity, a system of social control that sets heterosexual relationships as natural and normal, and is "an ideological composite [that] fuses together a gender ideology, a sexual ideology, and a family ideology into a singular theoretical complex" (Oswald, Blume, & Marks, 2005, p. 144). Zanghellini (2007) argued that most proponents of gay and lesbian parenthood unknowingly accept these nonepistemic assumptions by engaging in the discourse of whether or not gay and lesbian parenthood harms children.

### **Epistemic Values**

The prevailing epistemic value of using heterosexual married parents and children as the standard by which other families must compare is a value that some scholars have argued dominates and constrains research on children of

homosexual parents (Berkowitz, 2009; Goldberg, 2007a; Zanghellini, 2007). Assuming that sex and sexual orientation in general and homosexual identity in particular are categorical variables that represent homogenous groupings is another epistemic value in this literature (Goldberg, 2007a). As a result, the variability of these concepts and the meanings attached to them are seldom considered in research on children in these families, and so context often is lost in the debates about what is good or bad for children.

Critics of prevailing epistemic values of developmental science suggest the use of feminist standpoint theorizing, critical theory, queer theory, and other conceptual approaches that reject heteronormativity. Like queer theory, feminist standpoint and critical theories emphasize conducting research through the lens of homosexuality in efforts to better understand the experiences of gay and lesbian parents and their children, without comparing them to heterosexual parents and children with expectations of difference and deviance (Berkowitz, 2009; Goldberg, 2007a). These theories advocate using more interpretive, qualitative methods that allow researchers to more fully assess the contexts within which “queer” parents rear children (Berkowitz, 2009; Berkowitz & Ryan, 2011). Proponents argue that such approaches open researchers to more nuanced understandings of the experiences, thoughts, and feelings of children (Goldberg, 2007a) and parents (Berkowitz & Ryan, 2011) in homosexual families.

## **FAMILY DIVERSITY AND ASSISTED REPRODUCTIVE TECHNOLOGIES**

The term assisted reproductive technology (ART) can be applied to any use of equipment to fertilize an embryo or create a pregnancy without sexual intercourse. ART includes in-vitro fertilization, embryo and gamete donations (sperm, egg, or both may be donated), and surrogacy. In-vitro fertilization is when the mother’s eggs are fertilized with the partner’s sperm in a laboratory and the fertilized embryo is placed back into the mother’s womb to be carried to term. Embryo donation (donor insemination or gamete donation) is similar to in-vitro fertilization except that the donated embryo, egg, and/or sperm come from a third party other than the child’s intended legal or social parents. Surrogacy involves aspects of in-vitro fertilization and donor insemination, the primary difference being that pregnancy is brought to term by a woman other than the child’s intended legal or social mother. The sophistication of ARTs range from self-fertilizing with donated sperm

using a turkey baster to a lengthy series of medical consultations, hormone treatments, and surgeries involved in zygote intrafallopian transfer. ARTs may have been used since biblical times, but they gained widespread attention in 1978 after the birth of Louise Brown, the first child conceived in a Petri dish (Robertson, 1994).

In 2003, European national registries reported that 284,765 ART treatments had been performed (Andersen et al., 2007). By 2012, the approximate total of ART births since 1978 had reached over 5 million children, and the International Committee for Monitoring Assisted Reproductive Technologies (ICMART) estimated that annually 350,000 children are born through ARTs (ICMART, 2012). Both the demand for and success rate of these procedures is increasing substantially (Centers for Disease Control and Prevention, 2013).

Demographic variables that distinguish between women who experience infertility problems and make use of ARTs and those who do not have identified that ARTs users tend to be older (between the ages of 35 and 44), married, non-Hispanic European Americans, who likely have an income at least 300% of the poverty level and a college degree (Stephen & Chandra, 2000). ART is more expensive than poor women or couples can afford.

ARTs have been controversial. Reproduction without sexual intercourse is seen by many as unnatural (Nerlich, Johnson, & Clarke, 2003) and the disconnection of gestational and genetic relationships between parents and children with some ARTs worried clinicians and ethicists (Golombok, 2013). Infertile individuals, gays and lesbians wanting children, and other single adults wanting to become parents welcomed ARTs (Golombok, 2013).

Because ARTs have been somewhat stigmatized, parents have tended not to disclose to children how they were conceived for fear of harming parent-child relationships (Golombok, Murray, Brinsden, & Abdalla, 1999). Disclosure to school age or younger children appears to have little effect on them, but adolescents and young adults tend to be upset upon learning about their origins. Many seek contact with donors (Jadva, Freeman, Kramer, & Golombok, 2010) and often engage in more negative internalizing behaviors and are more distressed than peers who are unaware of their status or whose status was disclosed at earlier ages (Colpen & Soenen, 2002).

### **ART Effects on Children**

Studies of gay and lesbian parents who used ART were discussed in an earlier section of the chapter so here we

limit discussion to ART children of infertile couples and single mothers by choice. Findings regarding the physical or cognitive effects on children conceived via ART have been mixed, with some researchers reporting no differences between ART children and other children in congenital malformations (Ludwig & Katalinic, 2002) and psychomotor development (Jongbloed-Pereboom, Middleburg, Heineman, Bos, & Hadders-Algra, 2011), whereas others found significantly greater risks for children conceived using ARTs in lower birth weight (Sutcliffe et al., 2001), and younger gestational age at birth (Stromberg et al., 2002).

Overall, researchers have reported no differences in psychological or behavioral problems between children born via donation of sperm (Golombok et al., 2002), egg (Golombok et al., 2006), or embryo (MacCallum, Golombok, & Brinsden, 2007), and children who were spontaneously conceived, adopted, or conceived via IVF (Golombok, MacCallum, & Goodman, 2001). Similarly, children born via surrogacy have not been found to differ in emotional, behavioral, or psychological adjustment compared to other ART children or to spontaneously conceived children (Golombok et al., 2006). Few studies have focused on single mothers using ART by choice; a longitudinal investigation of infants and toddlers found no emotional or behavioral differences between children of single ART mothers and married mothers of spontaneously conceived children (Murray & Golombok, 2005).

### ***Theory in Studying Children Born to Parents Using ARTs***

Attachment theory has been used in some studies, but for the most part ART studies have been atheoretical. Although researchers have explored the possibilities that parents who used ARTs engage in different parenting styles than do parents in other types of families, in general no differences have been found between ARTs and spontaneously conceiving parents in regards to maternal negativity (Golombok et al., 2011) and quality of parent-child interactions (Steel & Sutcliffe, 2009). Some investigators found that ART parents score higher on control and involvement with children than do spontaneously conceiving parents (Colpen & Soenen, 2002), and that new ART parents often display and report higher levels of warmth, joy, and attachment to their newborn children than do spontaneously conceiving parents (Golombok et al., 2006, 2011; Hahn & Dipietro, 2001). Finally, researchers have studied ARTs from an identity theory approach, exploring how offspring make meaning of their relationships and reinterpret their

conception and birth history as they enter adolescence and adulthood.

### ***Methods***

Cross-sectional studies on adolescents and young adults often have recruited samples from online message boards and support groups for children attempting to gain contact with their biological parents (Jadva et al., 2010). ARTs children who find out about their birth status before the age of 18 often engage in such searches out of curiosity and perhaps to resolve identity issues that arise; in contrast, those informed after 18 tend to search for pertinent medical information (Jadva et al., 2010). Most researchers on ART's effects on children have utilized longitudinal designs (Brewaeys, 2001; Hansen, Bower, Milne, de Klerk, & Kurinczuk, 2005). In some European countries, regulations regarding the use of ARTs and centralized registries have allowed researchers to follow large cohorts of children born using ARTs synchronously with adopted children or children conceived through vaginal intercourse (Nekkebroek et al., 2010). In contrast, researchers in countries with less centralized health care systems (e.g., United States) have had to gather convenience samples, often from a single hospital or clinic (Ellison et al., 2005).

Policy research on ART has primarily dealt with legal ownership of donated genetic material, the parentage of live births that result from such donations, and whether governments or clinics have the legal obligation or ability to limit the number of cycles of treatment an individual or couple may undertake. The ownership of donated material has become a salient concern to ethical and legal scholars largely due to fears regarding the birth of children who lack clearly identified genetic parents, which in most U.S. states forms the basis of legal family frameworks (Sparrow, 2012). Although some courts in the United States have privileged the parental rights of intended legal parents of children conceived through ART, legal parentage remains dominated in most countries by presumed genetic parenthood.

Experimental research in ARTs families is still dominated by comparisons of conception methods among couples facing fertility difficulties (e.g., comparing couples that elect for surrogacy, IVF, adoption, or spontaneous conception; Golombok, 2013; Van Steirteghem, Bonduelle, Devroey, & Liebaers, 2002). Although some researchers and practitioners have recommended that ART physicians and legal professionals should inform prospective parents about potential risks associated with ARTs, systemic

research on interventions that might be beneficial to parents electing to use ARTs and their children does not exist.

### *Summary of ART-Conceived Children*

Like many other diverse families in this chapter, study of children born using ARTs has followed a trajectory of descriptive studies, comparisons to spontaneously conceived children in nuclear families, to more complex within-group explorations of family processes that may affect child development. There appears to be some consensus that despite somewhat increased risks for low birth weight and low gestational age, children born using ARTs follow similar developmental trajectories to their peers in other family forms. Additionally, the resilience of children born via ARTs is often buffered by the likelihood of their parents having ample economic resources and a high commitment to childrearing. Important questions currently under investigation include whether, when, and how a child's ART status ought to be disclosed, and what role surrogates and donors ought to enact in the lives of children whose birth they helped create. Within-group studies and continued use of longitudinal designs to examine changes over time are trends within the field that will contribute to improving knowledge about children born using ARTs.

Advancements in technology suggest that there will be increasing complexity in techniques used by fertility specialists and families in regards to human reproduction. Via ART, children now may have up to five parents—a sperm donor, an egg donor, a surrogate mother to carry the child through pregnancy, and two parents. New technologies raise the possibility of a third genetic parent, as researchers have fused genetic material from two mothers among mice to alter genetic codes for specific results (Ralston & Rossant, 2005). Identity issues for children, therefore, may become increasingly salient (Jadva et al., 2010). Relationships with half-siblings linked by a donor also may become more important to emerging adults, as donor sibling registries and other methods of connecting to kin are devised (Golombok, 2013).

## **CHILDREN REARED BY GRANDPARENTS**

Families in which grandparents are raising their grandchildren are commonly referred to as grandfamilies, and about 2% of children in the United States live with a grandparent with no parent in the household (U.S. Census Bureau, 2011). These grandparents are known as custodial grandparents, a label that refers to children's physical residence

rather than legal status, although some residential grandparents are legal guardians of grandchildren (Dunifon, 2013).

Grandfamilies are formed when, for a variety of reasons, parents are either not available (e.g., incarceration, military deployment, death) or they are not able to care for children (e.g., mental health problems, substance abuse, poverty; Edwards, 2006; Strong, Bean & Feinauer, 2010). Grandparents are often among the first persons called upon to assume caregiving responsibilities for children when parents cannot, and they assume these responsibilities largely because they would rather grandchildren reside with them than in care facilities or nonfamilial arrangements such as foster care (Weber & Waldrop, 2000). African American children are more likely to live in grandfamilies than are European American or Hispanic children (Kelch-Oliver, 2011).

The availability of large numbers of healthy grandparents, many of whom are middle aged or younger, also has contributed to the rise of grandfamilies (Bernal & Anuncibay, 2008). Increases in longevity and additional years of good health allow grandparents to serve in caregiving roles for extended periods.

The creation of grandfamilies often follows a crisis or series of stressful events linked to the parents' inability or unwillingness to rear their children (Strong et al., 2010). Children in grandfamilies thus have experienced stressors that, along with the absence of parent(s), may contribute to feelings of sadness, anger, fear, and confusion (Poehlmann et al., 2008).

Grandfamilies are often poor, in part due to financial burdens that accompany custodial grandparenthood (Baker & Mutchler, 2010). Even middle-class custodial grandparents find financial demands related to childrearing expenses stressful. Incomes also may be affected if custodial grandparents in the workforce have to reduce hours to fulfill caregiver roles. Additionally, custodial grandparents may be stressed by legal issues and housing concerns; their homes may have inadequate room for grandchildren (Baker & Mutchler, 2010). If grandparents are informal rather than legal guardians of grandchildren, negotiations with social service agencies, schools, and other institutions may be complicated (Letiecq, Bailey, & Porterfield, 2008). Grandparents also may be unsure of how to interact with these groups, and this uncertainty may hinder their efforts to seek external support for their grandchildren (Letiecq et al., 2008). Although nonresidential parents are sometimes involved with children (Dolbin-McNab & Keiley, 2009), involvement is often inconsistent and may add stress for children and grandparents (Messing, 2006).



### Effects on Custodial Grandchildren

Although a few researchers have found that custodial grandchildren are healthier than children living with one or two biological parents (Solomon & Marx, 1995), most have concluded that residing in grandfamilies poses physical and mental health risks for children (Billing, Ehrle, & Kortenkamp, 2002; Bramlett & Blumberg, 2007; Silverstein & Vehvilainen, 2000). Given the likelihood that grandfamilies live in poverty, it is not surprising that custodial grandchildren may experience food insecurity and may experience negative developmental outcomes related to chronic malnourishment (Baker & Mutchler, 2010).

In most studies, custodial grandchildren, compared to children living with both parents, were at increased risk for emotional and behavioral disorders (Billing et al., 2002; Bramlett & Blumberg, 2007; Leder, Grinstead, Jensen, & Bond, 2003), and were more likely to experience posttraumatic stress disorder, depression, anxiety disorders, and/or developmental delays, likely due to trauma exposure that preceded their transition into the grandfamily (Fergusson, Maughan, & Golding, 2008). Custodial grandchildren also are more likely than children living with both parents to experience moderate to severe difficulties with emotion regulation, concentration, behavior management/conduct, peer relations, and depression/anxiety (Bramlett & Blumberg, 2007). Those in infancy or early to middle childhood were at an increased risk of experiencing attachment disruptions (Poehlmann et al., 2008).

Teachers and custodial grandparents perceived grandchildren as experiencing more emotional and behavioral problems in the classroom than other children (Edwards, 2006), and they were more likely than children living with both parents to fail a grade (Solomon & Marx, 1995), perform poorly on reading and math evaluations (Sawyer & Dubowitz, 1994), and be less engaged with school (Billing et al., 2002). Custodial grandchildren were more likely than peers to receive clinical treatment and support due to hyperactivity, depression, oppositional behavior, attention deficit hyperactivity disorder, temper tantrums, mood swings, and social isolation (Grant & Kucera, 1998), and they were more likely than other children to receive special education services (Edwards, 2006).

### Explanatory Mechanisms

The reasons posited to explain why custodial grandchildren are at a developmental disadvantage when compared to peers from two-parent and single-parent households,

include attachment disruptions (Strong et al., 2010), lack of social support for grandparents raising grandchildren (Leder et al., 2003), family instability (Edwards, 2006), poverty (Baker & Mutchler, 2010), and psychological trauma related to parental absence (Weber & Waldrop, 2000). As with other diverse families, it is difficult to delineate between stressors affecting children's development prior to living in a grandfamily from effects due to living in a grandfamily (Strong et al., 2010).

### Gaps in the Literature

Many of the studies about grandfamilies have had small samples and cross-sectional designs. Longitudinal research is needed to examine long-term effects of grandfamily living on children, with foci on ways custodial grandparents can serve as protective buffers for grandchildren in times of stress (Dunifon & Bajracharya, 2012). Greater attention also should be paid to ethnic diversity, and how grandchildren's and grandparents' ages are related to child outcomes (Weber & Waldrop, 2000). Nonresidential parents' roles in the children's lives also should be explored (Dunifon, 2013). Finally, researchers would benefit from improved understanding of the differences between stable, well-functioning grandfamilies and high-risk grandfamilies that require intensive clinical treatment; this information could inform intervention programs aimed at promoting grandfamily resilience.

Among the primary challenges researchers have identified for grandparents raising grandchildren are increased psychological and economic stress placed on grandparents as care providers. Consequently, efforts have been made to develop interventions. Multimodal home-based interventions delivered by nurses, social workers, and legal professionals have been found to increase social support and reduce stress for caregiving grandparents (Kelley, Whitley, & Campos, 2013).

The relative effectiveness and benefits to children of grandparents providing foster care compared to foster care provided by nonrelatives have little research support. Though many advocates for kinship care suggest that grandparents (and other kin) can provide more continuity in children's lives, and therefore more benefits, children in kin arrangements often face more difficult circumstances (i.e., fewer economic resources, less food security) compared to peers in traditional foster care (Ehrle & Geen, 2002). Many states have adopted a preference for kin care, however, because it is less expensive and legal precedents favor kinship placement (Leos-Urbel, Bess, & Geen, 2000).

### Summary

Grandchildren reared by grandparents generally have lower well-being than their peers living in other family structures. Grandchildren often face multiple stressors (e.g., poverty, loss of parents) and frequent, multiple transitions. Research into grandfamilies is still in the early stages, and much more needs to be known about children in grandfamilies and effective interventions for them and their grandparents.

## CHILDREN IN DIVERSE FAMILIES: A SUMMARY

In general, children in diverse families do not fare as well developmentally as children growing up with two continuously married parents. There are exceptions to this, with children reared by gay or lesbian parents, children born as a result of ART, and most bereaved children over time, being comparable to children in nuclear families on the common outcomes measured—internalizing and externalizing behaviors, cognitive and school performance, health, and interpersonal relationships. Of course, not all studies find that children in diverse families are deficit compared to those in first-marriage families, and in some studies (e.g., stepchildren), effect sizes are often small. There is not yet consensus among scholars on the causal reasons behind these differences. Leading candidates are explanatory models that include family socioeconomic status, transitions (i.e., the number, timing, and nature of transitions), stress and coping variables, the quality of family relationships (e.g., between coparents, parents and children, children and nonparental caregivers), and societal support (e.g., stigma, institutionalization, socioenvironmental factors). Intrapersonal factors (e.g., mental health, genetic predispositions, substance abuse) also should be considered as likely relevant explanatory constructs. Progress has been made in understanding how family status and family processes interact to affect children, but there is still work to be done.

### The Developmental Trajectory of Research on Children in Diverse Families

When a community of scholars begins studying an identified group of children and their families who are seen as experiencing or presenting problems to society, there is a recognizable research trajectory that has four phases. The *first phase* consists of descriptive and demographic studies identifying the group and the issues experienced by that group. This is a *social address* approach in which the

target group of diverse families is treated as homogeneous. Simple comparisons are made between the target group and two-parent married families, often using small samples. For instance, early researchers of stepchildren, categorized children from stepmother, stepfather, and complex, blended households together as a single group, with scant attention paid to controlling for years in the stepfamily, precursors (parental death or divorce) to stepfamily living, and other relevant variables. Stepchildren were then compared to children in first-marriage families and, sometimes, to children living with a single parent. In initial studies of specific types of structurally diverse families, theories are rarely employed.

In the *second phase* of a research trajectory on diverse families, researchers employ larger, more representative data sets and more sophisticated study designs. For instance, variables known to differ across family types are controlled, and attempts are made to assess family dynamics as well as family structure. During this phase, the intersections of family processes and family structures are explored, and there is some effort to use theories to guide variable selection. Researchers also become more aware of data set limitations in being able to control for important variables or to examine potentially relevant family processes. For instance, stepchild researchers began limiting samples to stepfather households only because enough stepmother households to include in statistical analyses could not be located.

Researchers also begin utilizing longitudinal data sets to search for changes in children over time, and begin considering selection effects as an explanation for differences between children in diverse families and other children. Also, a rise in small qualitative studies designed to explore processes within the specific type of diverse families are seen. Intervention studies also appear in the literature, but they tend to consider the target diverse families as mostly homogeneous, and interventions are “one-size-fits all” designs. Bereaved children and grandfamilies are generally in this phase of the research trajectory.

In the *third phase* of the research trajectory, there is greater reliance on longitudinal studies, sometimes framed from the perspective of multiple family members (data collected from children, parents, and sometimes teachers or others). The efforts by researchers to control for inherent differences in family structures are more sophisticated and greater attention is given to contexts, such as the number and timing of transitions, the types of transitions, and precursors to current family type. Greater attention is paid to gender issues (e.g., gay and lesbian families,

stepfamilies), and researchers take care in deconstructing parents' marital and relational statuses (e.g., unmarried and cohabiting parents).

Also in this third phase, research questions become more nuanced and gradual "truths" about children in various family structures become known through replication of findings in multiple settings with diverse samples from the target population (e.g., stepchildren). In studies of some family forms, researchers begin looking beyond households as they conceptualize family membership (e.g., nonresidential parents were included in studies of stepchildren and children in divorced families; half-siblings and stepsiblings that did not share a residence with target children also got some attention), and researchers' conceptualizations become more complex and more closely reflect the realities of children's and families' lives. Research on children of gay and lesbian parent families and ART families are in this phase.

In the *fourth phase*, researchers continue examining the interactions of family structure and family processes (particularly parenting, parent-child relationship dynamics), using theoretically informed and analytically sophisticated designs. Selection effects are examined in various ways, including the use of fixed effects analytic designs, differences within differences approaches, and matching of children and parents in diverse families to children and parents in nuclear families. Multiple theoretical explanations are examined in this phase. There is the start of work examining biogenetic and genomic effects on children in diverse families, as well as examinations of children's effects on parents and on their own developmental processes. Qualitative research in this phase is focused on illuminating processes within family structures, leading to grounded theories, testable quantitative hypotheses, and more understanding of how context affects children and their families. There are more mixed methods designs. Of the types of diverse families presented in this chapter, the bodies of research on unmarried families, postdivorce families and stepfamilies are in this phase.

Crosnoe and Cavanaugh (2010) were referring to this latter phase of research when they asserted that "we stand on the cusp of a paradigm shift in which we will be able to establish causal pathways and unpack actual processes better than ever before" (p. 594) in the study of families with children and adolescents. The increasing sophistication of analytic models, the availability of large, representative longitudinal data sets from multiple nations, and refinements in qualitative research approaches suggest that the study of children in diverse families is on the verge of significant

growth. This does not suggest, however, that challenges do not remain.

## Challenges and Concerns in the Study of Children in Diverse Families

### Comparison Groups

Who are appropriate comparison groups for children in structurally diverse families? Should children living with married biological parents always be the standard of comparison? Clearly, for most researchers the choice of two-parent nuclear families as the comparison for diverse families is the default, but this epistemic value does not always make conceptual sense and may lead to designs that conflate number of parents, sex of parents, biogenetic relationships between parent and child, and marital status of parents (Biblarz & Stacey, 2010). Social and political conservatives generally have treated first-marriage nuclear families as the norm to which all other families are compared and found wanting. Social and behavioral scientists too often have either embraced or accepted this view, perhaps because they share these nonepistemic values about family structure or because theories and conceptual frameworks implicitly support this view. Whatever the reason, researchers need to think clearly and be explicit about their decisions regarding comparison groups. There is evidence that more researchers are employing family structure comparisons that are not limited to first-marriage nuclear families (see research on children living with unmarried cohabiting parents, for instance). A few researchers have begun using designs comparing well-functioning and poorly functioning children and families from given family structure types (e.g., stepfamilies).

### Sampling

Finding samples of children in diverse families is challenging (e.g., bereaved children, gay and lesbian families). Stigma and self-definitions contribute to making these children and their parents hard to locate. Some children and parents prefer not to be identified as members of diverse family structures (e.g., gay and lesbian families, stepfamilies, divorced single parents, ART) because of perceived stigma associated with membership. In addition, family members define their relationships and statuses in ways that do not always coincide with researchers' definitions. The socially constructed nature of family status may influence how individuals identify themselves to researchers. For example, children who perceive their stepfathers to be

their fathers may not identify themselves as stepchildren. In a methodological study based on the National Study of Families and Households longitudinal data sets, White (1998) found that 15% of family membership changes were based on respondents' social constructions of family life.

### ***Design Diversity***

More qualitative research and mixed method designs are needed that will allow scholars to examine family experiences and meanings held by family members. There also is a need for thick description of the contexts within which children and their diverse families live and for qualitative studies that elucidate internal family processes with in-depth analyses. Quantitative studies capture certain types of family process variables, but qualitative data are needed to augment what we are learning from large secondary data sets of children and parents in diverse families. Children and adolescents as well as parents and other family members should be included in these qualitative efforts.

More varied approaches are needed in studying children in diverse families. The current literature is dominated by self-report methods (i.e., interviews, questionnaires), often of only a single family member, usually a mother. Data collected from multiple respondents are needed, as are observational studies and investigations that combine multiple methods.

### ***Transition Effects***

Family instability makes it hard for researchers to unpack the effects on children of living in diverse families from the effects of family transitions. In some families, transitions occur so often that even in large-scale, longitudinal data sets, it is possible to miss some transitions experienced by children. More longitudinal studies are needed that allow researchers to attend to the number, sequence, and type of transitions, and also be able to assess the potential effects of particular family structure precursors to living in specific types of diverse families. Many children live in multiple family structures before they reach adulthood. Family structure is more often a fluid phenomenon than it is a fixed property or stable family factor. This not only challenges researchers, it also presents an opportunity for programmatic research into the specific effects of transitions on children.

### ***Structural Overlaps***

Not all diverse families are discrete structural forms. For instance, many gay and lesbian families are a type of

stepfamily, with issues and dynamics that fit stepfamilies as well as families headed by same-sex parents. Similarly, some cohabiting families are stepfamilies and some are not. These overlaps challenge researchers to be clear about whom and what they are studying and the family processes they expect to affect children.

### ***Theory-Methods Connections***

Stronger connections are needed between theory and methods in studies of children in diverse families. Across the families types reviewed in this chapter, a limited number of explanatory mechanisms have been proposed. Most of these are neither theories nor even conceptual frameworks, but propositions drawn from prior investigations. The availability of national and other large, representative data sets might help strengthen theory-methods connections, as should the greater use of statistical techniques such as growth curve modeling. Qualitative researchers are also generating testable hypotheses from their work (e.g., stepfamily dynamics), which should enhance future research and theory linkages.

### ***Genetic Influences***

Developmental research on children in diverse families is heavily focused on nurture and environmental influence, and less on genetic influences. This is a serious methodological and theoretical gap; models of parental influences on children may be missing genetic influences if they are not examined along with environmental effects (Crosnoe & Cavanagh, 2010). The researchers that have examined genetic connections between children and parents support a gene  $\times$  environment model and make a strong case for including genetic relatedness as a factor to be considered in studies of children in diverse families (e.g., Reiss, Neiderhiser, Hetherington, & Plomin, 2000).

### ***Selection Effects***

Selection effects continue to be an issue in the study of diverse families. More scholars need to try to account for selection effects and, more specifically, identify when selection effects occur, and why and how they affect children's development.

### ***Households Are Not Families***

Although seldom stated explicitly by developmental scientists, a common assumption implicitly made about children's families is that all relevant family members share a residence. Consequently, it is not unusual in developmental studies for families to be operationalized as those



individuals sharing a household. A narrow research focus equating households and families precludes scholars from being able to assess and understand the complete contexts in which children's development occurs. For instance, nonresidential fathers have been examined in some diverse family types (e.g., unmarried, post-divorce, stepfamilies), but more attention is needed on the influences of siblings, grandparents, and parents (including mothers) who do not share a child's household.

### *Including Fathers*

Fathers are relatively ignored in studies of diverse families. Notwithstanding the attention paid to nonresidential fathers in some bodies of literature, more attention should be paid to fathering and father's effects on children. Little is known, for instance, about gay fathers and children living with fathers only.

### *Including Ethnic Minorities*

Ethnic minorities are often underrepresented in samples. Research in the last decade has more successfully assessed ethnic differences in family processes across diverse family structures (e.g., in studies of unmarried parent families, grandfamilies), but samples in studies of bereaved children, children reared by gay and lesbian parents, and ART contain little ethnic diversity. Even the body of research on divorced families and stepfamilies lacks ethnic diversity in samples. In addition to studying how ethnicity interacts with family structures and family processes, researchers need to explore variability in the meanings of parenting and other family processes across ethnicities (Crosnoe & Cavanagh, 2010).

### *Policy and Intervention Studies*

Although some attention has been paid to the effects of public policy and legal issues on children in diverse families, particularly in work on children of divorced parents and children in gay and lesbian families, this research is still in its infancy.

More intervention studies that include well-designed evaluations are needed for almost every type of diverse family. Effective family interventions are challenging to implement because families within a given social category vary so greatly that a "one size fits all" approach, although more cost-effective to deliver, is less effective than more nuanced approaches of what works, and when, how, and with whom. Small bodies of intervention research exist for bereaved children, stepchildren, and for children who have divorced parents, but these studies often were characterized

by small samples, the absence of comparison groups, and inadequate measurement of outcomes; most interventions of children in diverse families have not been replicated.

## **A FINAL WORD**

In the chapter introduction we discussed how epistemic and nonepistemic values affect research on children in diverse families (Clingempeel et al., 1987; Lamb, 1982). Over the past 25 years, the prevailing epistemic values have evolved so that family structure and family process variables now are most often combined as indivisible parts of a whole perspective. Gradually, scholars from the many disciplines that study children and families appear to have created a set of multidisciplinary epistemic values presenting an integrative view that includes family structure, parents' mental health, parenting processes, relationship quality (e.g., parent-child, coparents), stress related to family functioning and economic hardships, the presence or absence of community support, and, less often, biological and physiological variables. Guided by relational developmental systems metaframeworks (Lerner, 2006; Lerner et al., 2010), scholars using quantitative, qualitative, and mixed methods have embraced this perspective. These multidisciplinary epistemic value changes bode well for the future study of children in structurally diverse families.

Nonepistemic values have also changed, but researchers are not free from their influence. For example, potential study participants are affected by cultural beliefs about the relative goodness and badness of various family forms, and, as we noted earlier, perceived stigma about divorce, stepparent or stepchild status, homosexuality, and artificial reproduction make it harder for researchers to locate study participants who may be reluctant to expose themselves and their family members to discrimination or worse.

Researchers' beliefs also are relevant. Although most researchers may be abandoning parents' marital status as a causal variable affecting children's well-being, and focusing more on interactions between family structure and process (Crosnoe & Cavanagh, 2010; Smock & Greenland, 2010), cultural values still hold marriage as a valued status believed to have positive effects on children and their parents. For instance, the U.S. government's Healthy Marriage Initiative spent millions for programs to encourage and strengthen marriage. These widely held values about children and their families affect both research participants' responses (e.g., social desirability) and researchers' analyses of data. The debate on children's outcomes in

gay and lesbian families (e.g., Regnerus, 2012a) is a clear example of the influence scholars' (and research funders') nonepistemic values about families have on how research is conducted and the conclusions that are drawn.

Diverse family structures are not new, but widespread trends, such as the decoupling of childbearing and marriage, increases in unmarried parenthood and multiple partner fertility, and greater family structure instability, are accelerating the pace of change. What is new is that "today's family scholars have multiple sources of rich data and useful methodological tools with which to try to understand such changes and their implications" (Smock & Greenland, 2010, p. 589). In addition, developmental and family scholars more often seek "to specify and test individual  $\leftrightarrow$  context relations that are linked developmentally to health and positive functioning" (Lerner & Overton, 2008, p. 247), instead of simple comparisons of children in diverse families to those in nuclear families. Understanding how children and their families change in positive directions and learning how to proactively enhance those changes are among the key tasks for the field.

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## CHAPTER 5

# Children in Peer Groups

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## INTRODUCTION

One of the coauthors of this chapter has had the opportunity to live with groups of same-age children and adolescents for years at a time. As a coach of groups of elite hockey players who have ranged in age from 7 to 20-plus years, these ethnological encounters have made it rather clear that peer interaction, relationship, and group experiences play significant roles in the social, cognitive, social-cognitive,

emotional, and, in these particular cases, physical lives of each individual participant. In many ways, the informal observations of the coauthor/coach have been formally supported by the research that readers will review as they make their way through this chapter. Take the following informal observations of an ice hockey team as examples:

At the beginning of each season, children, many of whom are in unfamiliar social territory, try out for a given team. During these tryouts, participants are observed by

a selection staff as they demonstrate particular *individual* and team skills. Eventually, a team is chosen and a *group* is formed. One immediate result of failing to make the team pertains to the construct of social comparison. It is often the case that individuals come to believe that they are not good enough, and they consequently come to exclude themselves from *interacting* with their more “successful” peers. To make matters worse, in some cases, members of the successful group tease those who have not been selected. *Rejection* and *exclusion* may occur; *rejection sensitivity* may be experienced. Depending on individual characteristics (e.g., temperament/personality; social-cognitive acumen) and the relationship experiences each “unsuccessful” participant has experienced in the past, the individual may continue to pursue other possibilities that will allow participation in the sport (e.g., try out for another team; participate at a lower level of expertise); others may decide to turn to another activity altogether. The point is that from a rather early age, children compare themselves to their age-mates on all manner of characteristics, abilities, and beliefs. These social comparisons can affect how one interacts with others, who one may befriend, and how one thinks and feels about the self.

Over the course of a season, *friendships* develop between members of the selected team. And *cliques* are formed as well. There appear to be good reasons for the formation of close dyadic relationships within the group; for example, friendships emerge between those who have similar interests beyond the confines of the arena; others develop friendships because they happen to be similarly skilled (*homophily*). And one begins to identify friendships simply by observing who it is that the participants sit near as they ready themselves for practices or games; who they join at the restaurant tables after a game is played; or in the case of adolescents who travel out of town for league games, who they ask to room with.

As the season progresses, the group develops a team “mentality.” Although there are clearly defined subgroups, when the larger group is engaged in competition, they band together to support each other, on and off the ice. They become the “ingroup” with an established set of norms and values that often have absolutely nothing to do with ice hockey. For example, the team may choose to wear specific modes of dress or listen to particular kinds of music that distinguishes the larger group from the “outgroup”—the competition. These norms and values are often “handed down” by those who are older and who have played on the team in an earlier year. In some cases, it becomes clear that some participants are more “central” to the group and

viewed by their teammates as leaders (and as *popular*). Also, within the group as a whole, disagreements and/or disputes may occur between its individual members. When the disputing members are friends, it is likely that some form of negotiation will occur that leads to an acceptable outcome for both partners. In other cases, one member appears to have his/her way in the dispute/disagreement. From observing the disagreements/disputes that occur over the course of the season, the observer is able to identify a *dominance hierarchy* within the group.

In the dressing room, prior to practices and games, it becomes readily apparent that some of the individuals are quieter than others; some are gruffer and more belligerent; some are more emotionally reactive both on and off the ice; some of the emotionally reactive individuals have difficulty regulating affect (thus spending much time in the penalty box) whereas others have little difficulty doing so; yet others promote coordination, inclusion, and collaboration. Typically, the members of the latter group become group leaders. Relatedly, each team member brings with her or him a set of individual characteristics that may play a role in determining the nature of interactions and relationships that occur within the group (and away from the arena). Often, *depending on age and gender*, members of the first two groups (the quiet and belligerent ones) become “outsiders,” rejected by the group as a whole. They may be members of the same team, but they are nevertheless rejected because their behaviors do not coincide with that which has become expected by the group as a whole. Whether these rejected individuals continue to make positive contributions to the group likely depends on the support (or lack thereof) that they receive from their friends on the team. If those who are rejected lack friends, their contributions to the team, on and off the ice, may well be limited and they may decide to isolate themselves from the group or quit the team. In either case, their intrapersonal selves will suffer. And this is when the typical coach must begin to think like a developmental scientist or psychologist. Failure to do so can lead a highly talented group of individuals to underachieve (and that may well be why, at all level of sporting activity, coaches are dismissed!).

Some individuals may make seemingly disparaging comments to their teammates, while at the same time, smiling at and laughing *with* their putative “victims.” Some of these victims return the smile and respond with similarly disparaging comments. Often physical or communicative roughhousing ensues, but the participants continue to display positive affect and recognize that these incidents are not truly antagonistic—and, it is clear to

most who are familiar with the participants, that this is not aggression! To the developmental scientist, the label applied is “rough-and-tumble” play. Nevertheless, there are likely to be members of the group who cannot recognize the nonliteral meanings of the disparaging comments and roughhousing. They assume that the protagonists are predators who mean them harm; they conclude that they are disliked by these cruel teammates. Often these assumptions could be the worst mistakes that an individual can make during the course of what can be a very long season. Thus, the ways in which each individual interprets the activities, overtures, and goings on within and outside of the dressing room will determine how pleasant or unpleasant the group experience will be.

## CHAPTER GOALS

For non-sports-minded readers, the goal of beginning this chapter with a description of what may go on behind the closed doors of youth hockey teams has been to illustrate some of the many social, emotional, biological, and cognitive factors that interact to determine the nature of peer relations. Some factors describe children’s individual characteristics (e.g., age, sex, temperament); some help define the meanings of interaction that may occur within and between groups (e.g., literal versus nonliteral meanings; cultural interpretations of behaviors and interactions); and some are focused on the nature of the relationships between the children (e.g., Is the relationship characterized by mutual like or dislike?), and their standing within the peer group (e.g., Are some children clearly “central” to the group? Are some children rejected by the group? Do some of the group members feel rejected by the group as a whole?). In moving beyond the example provided earlier, one may conclude that careful observations of children interacting with one another can only reveal clear “meanings” if one has knowledge of children’s individual characteristics, their relationships, their group memberships, and the communities and cultures within which they are dwelling (Hinde, 1987, 1995). In this regard, the understanding of children’s peer interactions, relationships, and groups is a complicated business.

The central goal of this chapter is to provide insights from extant theory and research on peer relations that will make the seemingly complicated, somewhat comprehensible. We begin this chapter with brief definitions of the constructs that will guide our review. In this first section, we describe, very briefly, the history of peer relations

research and the *raison d’être* for studying children’s peer interactions, relationships, and groups, and then we present the central theories that have helped to guide research on children and their peers.

In the second section, we introduce a conceptual model that guides our review of the extent literature on children’s peer interactions, relationships, and groups. We provide definitions and examples from each level of social complexity in the model and introduce the notions that context and culture *must* be considered if one is to understand children’s behavior and relationships with peers. Also, we note that one cannot understand any one level of complexity (e.g., children’s social interactions) without considering how it effects or is affected by each of the other levels (e.g., relationships, groups). In the third section, we consider the different methods and measures used to examine children’s peer interactions, relationships, and groups. Thereafter, we explore the nature of children’s relationships with peers and their impact on psychosocial adjustment. For example, we describe both dyadic (e.g., friendships) and group relationships and their effects on developmental outcomes; we also explore the literature on children’s intrapersonal thoughts and feelings about peer group processes. The chapter concludes with a discussion of future theoretical and empirical research directions.

## DEFINITIONS, HISTORY, AND THEORY

The term *peer relations* refers to the broad set of direct and indirect experiences that individuals of all ages have with their nonfamilial age-mates. Peer relations include an extensive array of phenomena including forms of behavior, affect, cognition, motivation, and relationships. In contrast to experiences within the family, experiences with peers are, at least by definition, more likely to be egalitarian, voluntary, and transitory. Due to their differences from adult-structured social domains, the peer domain presents children and adolescents with unique socialization experiences. The peer system is known to complement and supplement, rather than replicate, family-related experiences.

During the past 50 years, developmental scientists have come to learn through rigorous research and novel methodologies, that, in conjunction with the family, the peer system is a significant developmental force. The features and effects of peer experiences are developmental in at least two important ways: (1) they vary as a function of age, and (2) they can be the antecedents, or causes, *and* the consequences of other phenomena. In truth, theorists



and researchers have attempted to identify and measure the most essential features of children's peer experiences and to understand the central processes by which these experiences affect development for well beyond 50 years. In previous versions of this chapter in this *Handbook* (Rubin, Bukowski, & Parker, 1998, 2006), we described the historical origins of contemporary research on peer relations. Research on peer relations continues to be an area of remarkable activity and growth within developmental science. For instance, during the past decade, the time period covered by this chapter, well over 1,500 papers on aspects of peer relations have been published in archival journals, and many books have been focused specifically on peer relations (e.g., Bagwell & Schmidt, 2011; Cillessen, Schwartz, & Mayeux, 2011; Prinstein & Dodge, 2010; Rubin, Bukowski, & Laursen, 2009).

Research on peer relations is multidisciplinary. The dynamics and processes involved in peer relations fall within several traditional scholarly domains including developmental, clinical, and social psychology; sociology; education; neuroscience; anthropology; psychiatry; economics; cultural and media studies; and sport science. New directions in the study of peer experiences involve paradigms drawn from behavior and molecular genetics, social developmental neuroscience, and cultural models. These multidisciplinary approaches help to acknowledge that experiences with peers have extensive links with other domains of functioning as either antecedents to change or as the results of what has happened in them.

### Why Study Peer Relations?

The intense interest in peer relations has been motivated by several concerns and circumstances. They include (a) theoretical proposals regarding peer relations as a contributor to, and a manifestation of competent human functioning (e.g., Tomasello, Melis, Tennie, Wyman, & Herrmann, 2012) and multidisciplinary interests in the origins and significance of extrafamilial social cooperation (Nowak, Tarnita, & Wilson, 2010); (b) applied interests in the promotion of well-being and the prevention of problematic outcomes; (c) recognition that youth live in peer-rich social worlds in which their interactions with age-mates can occur around the clock via multiple modes of interaction; and (d) the presence of peer-related themes throughout contemporary popular culture and media.

Regarding these latter two points, children and adolescents often find themselves surrounded by peers. In increasing numbers, many children, beginning soon after

birth, spend a substantial portion of their weekdays in age-stratified social contexts within which they outnumber adults. Government policy initiatives in many jurisdictions in Europe, the Americas, Asia, and Oceania have promoted opportunities for contact with peers via daycare, prekindergarten education, and after-school programs for school-age children and young adolescents. For many children and adolescents, the peer world is the domain within which they spend the majority of their waking time during the week. Just as importantly, recently developed forms of communication technology and web-based social media programs have provided new forums for peer interaction. Youth can now have contact with each other more extensively, more quickly and thoroughly than anyone could have imagined as recently as 5 years ago. These opportunities touch on multiple processes related to communication between peers. In some ways, the extensive adoption of Internet-based social media sites has changed the peer landscape in radical and fundamental ways.

These social changes have occurred in conjunction with an increased presence of peer themes in many expressive genres of contemporary Western culture. Via books, movies, and television shows, peers have captured the attention of the general population in both positive and negative ways. On the positive side, children, adolescents and their friends have had central roles in many of the most successful movies and works of fiction from the past decade. For example, the central theme of the charming and complex *Harry Potter* books (and movies) is not wizardry and other forms of fantasy but rather the interactions and relationships among a group of peers who offer each other companionship, help, loyalty, and security as they make their way together through the challenges of growing up.

On the negative side, hardly a day goes by when there is not a report in the print or electronic media about adverse forms of peer experience in primary and secondary school contexts. Extreme cases of negative peer experiences have been identified by some journalists as the cause of such destructive outcomes as school shootings and suicides. Furthermore, the harmful effects of some experiences with peers have been portrayed extensively in popular TV shows (e.g., *Glee*, *iCarly*) and movies (e.g., *Mean Girls*, *Diary of a Wimpy Kid*, *The Perks of Being a Wallflower*). In contemporary cultural consciousness, peers relations are a constant fixture in the lives of young people that can be a source of joy and a source of pain.

Of course the most powerful motivation to study peer relations derives from theory that emphasizes the importance of peer experiences as antecedents of multiple forms

of development and adjustment. Peer-based processes are implicated in a wide range of theories intended to explain the processes that account for multiple aspects of development. References to the critical roles of peers can be seen in empirical work regarding the development of language (Justice, Petscher, Schatschneider, & Mashburn, 2011); basic cognitive skills (Rogoff, Goodman Turkkanis, & Bartlett, 2001); achievement motivation (Wigfield et al., Chapter 16, this *Handbook*, Volume 3); social cognition (Killen & Smetana, Chapter 17, this *Handbook*, Volume 3); fundamental forms of social interaction such as cooperation (Eisenberg, Spinrad, & Knapfo, Chapter 15, this *Handbook*, Volume 3) and aggression (Eisner & Malti, Chapter 19, this *Handbook*, Volume 3); emotion and its regulation (Calkins & Mackler, 2011); sexuality (Zimmer-Gembeck, Siebenbruner, & Collins, 2004); and physical well-being (Salvy, de la Haye, Bowker, & Hermans, 2012). A final motivation for studying peer relations stems from extensive evidence that peer relations predict subsequent behavioral and affective maladjustment. For several decades it has been known that multiple aspects of peer relations are prospectively associated with several forms of maladjustment (see Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006, for a review). Working largely within a developmental psychopathology framework, researchers have been keen to identify those aspects of peer experiences that function as risk factors; are causally associated with behavioral and affective maladjustment; and function protectively to minimize the likelihood of problematic outcomes that result from other experiences with peers or from other domains. Consistent with the view that peer experiences contribute directly to the growth of competence and well-being, clinically oriented researchers have devised peer-based interventions to promote effective functioning and to minimize maladjustment (e.g., Bierman, 2004).

### A Brief Note Regarding Classical Theories

The most basic and important questions about the roles of peers in child and adolescent development concern the processes by which social experiences with peers influence affect and behavior. In the past decade, there has been a decline in the explicit emphasis on particular "grand" theories, such as the ideas of Piaget and the concepts drawn directly from social learning theory. Instead, research has been driven by more focused concepts whose roots can be found in the extant "grand" theories, but are no longer perceived to be tied directly to them. An ironic consequence of this distance between current ideas and past grand theories

is a heightened importance of recognizing the broader conceptual frame of present approaches to studying peer interactions, relationships, and groups. Most relevant grand theories have been described extensively in prior *Handbook* chapters (Rubin et al., 1998; Rubin, Bukowski, et al., 2006) as well as in other recent sources (see Rubin, Bukowski, et al., 2009 for relevant reviews). Several of these theories have pointed to the behavioral, emotional, and social cognitive processes that underlie the development of competent functioning within the peer group. These processes can be drawn from the developmental models proposed by psychoanalytically oriented theorists, the symbolic interactionists, genetic epistemologists, and cognitive, social learning and social cognitive theorists. In the present chapter we attempt to situate current research within these larger theoretical approaches.

## INDIVIDUALS, INTERACTIONS, RELATIONSHIPS, GROUPS, AND CULTURE: A MODEL OF LEVELS OF COMPLEXITY IN CHILDREN'S PEER EXPERIENCES

For more than 30 years, recognition of the multiple levels of analysis that comprise the peer system has greatly increased. Especially significant in this regard has been the contribution of Robert Hinde (e.g., 1987, 1995) who outlined the features and dialectical relations between successive levels of social complexity. Hinde's model considers the types of interactions that may (or may not) occur given particular contributions of individual characteristics. From these interactions, relationships are formed (or avoided), and those relationships that develop come to exist within social groups that have their own particular characteristics. Significantly, groups exist within communities and cultures that bring with them generally agreed upon sets of norms and values.

### The Individual

The level of the *individual* refers to the person-related characteristics that children bring to and take away from their experiences with peers. Individual level variables include age, sex, race, and ethnicity; temperament and patterns of physiological response to arousal (e.g., behavioral inhibition; exuberance; sociability; emotion reactivity and regulation); developmental history; reputations that the individual has within given peer groups; social-cognitive skills and social competence (reflective interpersonal

problem-solving skills; consequential thinking; social information processing skills; the ability to achieve social goals in acceptable ways); self and relationships perceptions (e.g., self-perceptions of social skills; internal working models of relationships; the understanding of relationship constructs; the individual's thoughts and feelings about how others may think and feel about, and act toward them in given situations); and social goals and needs. The important point about variables at the level of the individual is that they pertain to the person *per se*.

Recently, at least two new perspectives have emerged in the study of individual characteristics and their relations to peer interactions, relationships, and groups. The first derives from the study of differences in the extent to which individuals prefer to approach or to avoid social situations. As outlined by McNaughton and Gray (2000), children possess two neural-based systems—the Behavioral Activation System (BAS) that motivates approach behaviors via sensitivity to reward and the Behavioral Inhibition System (BIS) that inhibits behavior in response to conditioned aversive stimuli. Although the BAS and the BIS were initially regarded as independent systems, it has been proposed that the two systems intersect to control behavior. Thus, children who are high in BIS and low in BAS are motivated to avoid social situations, whereas those who are low in BIS and high in BAS are motivated to approach others in social situations. Research on BAS/BIS sensitivity has shown that high levels of BIS are associated with poor perceptions of peer relations and consistently associated with several measures of internalizing problems such as depression, anxiety, and behavioral avoidance (e.g., Kingsbury, Coplan, Weeks, & Rose-Krasnor, 2013). Furthermore, the interaction between the BIS (low) and the BAS (high) predicts social/emotional competence (Kingsbury et al., 2013).

The emphasis on basic mechanisms of reward and inhibitory control is apparent also in recent theory regarding the role of changes in individual level characteristics and developmental changes in sensitivity to peer effects. Steinberg and his colleagues have proposed a neural-based developmental model of peer influence. This approach is predicated on the recognition that reward-sensitive aspects of neural functioning develop earlier than neural mechanisms related to control. Accordingly, the effects of peer influence are stronger during early adolescence at the time when reward mechanisms develop than they are in late adolescence after the control mechanisms emerge (e.g., Chein, Albert, O'Brien, Uckert, & Steinberg, 2011).

In a related advance, it is proposed that emotional reactivity and regulation can predict children's social interactions, which, in turn, may affect their peer relationships

(e.g., Degnan et al., 2011). For example, researchers have shown that the child's tendency to be emotionally dysregulated, when combined with dispositionally based unsociability, predicts the frequent enactment of socially reticent behavior among preschoolers (e.g., Rubin, Coplan, Fox, & Calkins, 1995). On the other hand, preschoolers who are emotionally regulated and unsociable are more likely to display exploratory and constructive solitude rather than anxious withdrawal in the classroom. And those who are sociable and unable to regulate their negative emotions (e.g., anger) are more likely to engage in aggression behavior than their age-mates who are sociable, yet well regulated (Rubin et al., 1995).

Another example of the significance of the effects of individual level biological factors on social interaction (or the lack thereof) derives from recent research by Barhight, Hubbard, and Hyde (2012). These researchers assessed emotional reactivity as an individual level construct that might predict children's actions in situations involving bullying. They posited that individuals who are highly aroused physiologically (high heart rate when witnessing videos of bullying) would be more likely than their age-mates who were unemotional, to intervene and disrupt bullying when it occurred in the classroom. Their findings that confirm this hypothesis point to the value of reactivity as an important individual level variable in peer relations research.

A second nuance in the study of individual-level characteristics that may affect peer functioning derives from recent research in neuroscience. Researchers have begun to show that neural mechanisms may mediate the relations between such individual characteristics as social anxiety and the ability to process social cues pertaining to peer rejection. It is now well known that children and adolescents who are socially anxious tend to demonstrate heightened amygdala sensitivity when confronted with instances of peer rejection or exclusion (often assessed during socially dynamic, simulated peer interactions such as "cyberball," wherein the participant is "excluded" by hypothetical peers, e.g., Guyer, Choate, Pine, & Nelson, 2012). And recently, researchers who study children who have experienced traumatic brain injuries have found that the brain structures of those who have mutual best friends in school vary from those who are friendless (Yeates et al., 2013). In both of these latter neuroscience programs of research, the investigators have relied on neuroimaging procedures. Given the current *neuro-Zeitgeist*, we expect that with advances in neuroimaging technologies, the study of brain-behavior relations will significantly advance knowledge on the connections between individual characteristics and peer interactions and relationships.

## Interactions

The simplest order of social complexity of peer experience involves interactions. Interactions refer to what individuals actually do to or with each other (Hinde, 1987). Behaviors that simply (and only) complement one another (such as riding on either end of a teeter-totter) would ordinarily not be considered true interaction unless it was clear that they were jointly undertaken. Instead, the term *interaction* is reserved for dyadic behavior in which the participants' actions are interdependent such that each actor's behavior is both a response to, and stimulus for, the other's behavior. Conversational turn taking is a paradigm-case illustration of interaction. For example, Child A requests information from Child B: "What's your name?"; Child B responds. "My name is Isabella. What's yours?"; Child A replies: "Jonah, but some call me Spiderman"; Child B answers: "Yea, and lots of my friends call me Batgirl!"; and so on.

Such a simple exchange as that of Isabella and Jonah belies the richness and complexity of the ways that children of most ages communicate with and influence one another. In addition to "introducing" themselves, children in conversation may self-disclose, joke, play, cooperate, plan and decision-make, and engage in coconstruction. They may compete, respond to provocation, argue, fight, resolve conflict, gossip, and engage in a host of other behaviors that includes everything from rough-and-tumble play to highly structured sociodramatic fantasy. Interactions can have many characteristics (e.g., they can be short or enduring, balanced or imbalanced) and they may vary in their content (e.g., they can involve prosociality and cooperation or agonism and conflict).

Typically, researchers have been less interested in cataloguing the myriad of interactional experiences than in understanding the origins and consequences of three broad childhood behavioral tendencies: (1) moving toward others, (2) moving against others (externalizing behaviors), and (3) moving away from others (internalizing behaviors). As a consequence, our understanding of children's experiences at the interactional level may be disproportionately organized around the constructs of (a) sociability and altruism (caring, sharing and helping, e.g., Knafo & Plomin, 2006); (b) aggression, bullying, negative gossip, and interpersonal conflict (e.g., Murray-Close & Ostrov, 2009); and (c) withdrawal (avoiding interaction, e.g., J. C. Bowker & Raja, 2011).

It is clear that children engaged in interactions vary their behavior as a function of such *individual* factors as their short- and long-term personal goals, an understanding of their partner's thoughts and feelings in the situation,

the depth of their repertoires of alternative responses, and various "ecological" features of the context of the interactions (e.g., the presence of bystanders in a bullying situation). It is the demonstration of range and flexibility in responding to the challenges of interpersonal interaction that many think of as composing social competence.

## Relationships

One consequence of regularly finding oneself in the company of another person and either interacting or not interacting with that person is the development of identifiable *relationships*. Individuals form internal representations of relationships and their properties based on their interaction-based experiences with the dyadic partner. The type of relationship that is formed may be influenced by the *quality* of the interactions between individuals. For example, positive interactions may lead to the development of meaningful, supportive, secure, and constructive *friendships* (Bukowski, Motzoi, & Meyer, 2009) and *romantic relationships* (Collins, Welsh & Furman, 2009); negative interactions may result in enmity (Card, 2010) or bully-victim relationships (Salmivalli & Peets, 2009). In this regard, relationships are influenced by past and anticipated future interactions.

Of course, relationships also are determined by individual characteristics. For example, racial homophily is a particularly strong predictor of initial peer attraction and the formation of friendships (e.g., McDonald et al., 2013). As such, most child and adolescent friendships involve same-race peers (e.g., Joyner & Kao, 2000). Although racial homophily often characterizes friendships, scholars have proposed that increases in racial diversity within a community can lead to increases in social integration and improved intergroup attitudes (McGlothlin & Killen, 2005). Thus, it has been proposed that with increased diversity, the prevalence of cross-race friendships will also increase (Quillian & Campbell, 2003). However, there is mixed evidence that diversity increases the prevalence of cross-race friendships, with some studies finding increased cross-race friendship prevalence only for particular groups (e.g., majority children) and others finding that the effect of diversity is dependent on other contextual features, such as the amount of segregation in extracurricular activities and academic tracks (e.g., see McBride Murray, Hill, Witherspoon, Berkel, & Bartz, Chapter 11, this *Handbook*, this volume).

Researchers have also noted that the quality and stability of children's friendships is associated with the interactions and collaborative decision-making that occur within friendship dyads (e.g., A. Bowker, 2004; Poulin & Chan,



2010). In general, close friends' interactions and collaborations are more competent than those of nonfriend interactors or of those whose friendships are poorer in quality. This literature is reviewed extensively below.

### Groups

A *group* is a social network within which *individuals* interact and *relationships* are embedded (Kindermann & Gest, 2009; Santos, Vaughn, & Bost, 2008). Groups can differ on multiple dimensions including whether they are self-selected (e.g., a clique in a secondary school) or created by institutional or social forces (e.g., children who ride the same school bus), whether the members are brought together by an explicit reason (e.g., a school-based club; a competitive sports team) or by reasons that are not entirely clear (e.g., a neighborhood peer group), and whether it is formal (e.g., a school classroom) or informal (e.g., a group of friends). Accordingly, groups possess properties that arise from the manner in which the relationships are patterned but are not present in the individual relationships themselves. Examples of such properties include *cohesiveness*, or the group's internal structure or organization; *norms* or descriptive features (e.g., distinctive patterns of behaviors, interactions, and attitudes that characterize group members and differentiate them from members of other groups); *hierarchy*, or the extent of intransitivity in the ordering of the individual relationships along interesting dimensions (e.g., if Fred dominates Brian and Brian dominates Anthony, does Fred dominate Anthony?); and *homogeneity* or *homophily*, or consistency across members in the ascribed or achieved personal characteristics (e.g., sex, race, age, intelligence, attitudes toward school). Finally, groups can be small (e.g., a few friends who like to "hang around" together) or large (e.g., a culturally or politically defined context such as a city).

Not only can dominance structures describe individual standing within groups, but they can also identify smaller groups within the larger peer structure. For example, groups comprise core and marginal members (Hogg & Reid, 2006). Within the group, core members are highly visible, popular, and socially powerful. Thus, core members have the power to persuade other group members to think like and agree with them. In some cases, status as a core member spans across a number of groups. For example, Sussman, Pokhrel, Ashmore, and Brown (2007) have identified a core group of "populars" who dominate the school setting. In contrast, marginal group members have relatively little status and power and their membership status within the group is more likely to fluctuate than that of a core member.

As noted above, the "glue" that holds groups together is drawn from shared values, attitudes, and behaviors of its constituent members (Kindermann & Gest, 2009). Thus, members in groups are interconnected through their dyadic relationships, while at the same time, sharing common interests and social conventions. These shared values and norms enforce appropriate within-group interactions between members.

Group norms can be used as a basis for distinguishing separate "crowds" within the networks of relationships among children in high school (e.g., Brown & Dietz, 2009). The emergent properties of groups also shape the experiences of individuals in the groups (e.g., Espelage, Holt, & Henkel, 2003). Thus, crowd *labels* constrain, in important ways, adolescents' freedom to explore new identities; *status hierarchies* influence the formation of new friendships; *segregation* influences the diversity of children's experiences with others; and *cohesiveness* influences children's sense of belonging. As such, the group can influence the individual. Indeed, many of the classic developmental studies focused on the peer group per se, including the Lewin, Lippitt, and White (1938) study on group climate, and Sherif, Harvey, White, Hood, and Sherif's (1961) examination of intragroup loyalty and intergroup conflict. In addition, recent theorists stressing the importance of children's peer experiences have generally conceptualized the group as an important developmental context that shapes and supports the behaviors of its constituent members (e.g., Xie, Cairns, & Cairns, 1999).

Returning to the intermix between levels of social complexity, some researchers have reported that boys are more likely to interact in groups, whereas girls are more likely to be exclusive in their relationships (see Rose & Rudolph, 2006, for review). Others report that girls value group membership more than boys and that they have more friends than boys. Yet others have failed to find significant sex differences in the extensivity of peer networks. This incongruence may be a function of the variety of methods used by researchers; for example, sex differences in the extensivity of networks and affiliation have been found when observational methods have been employed; but self-reports of group affiliations yield different results.

### Culture

It is important to recognize, that each of the levels described above falls under the all-reaching umbrella of the cultural macrosystem (e.g., Bronfenbrenner & Morris, 2006). Here the word *culture* means "the set of attitudes, values, beliefs,

and behaviors shared by a group of people, communicated from one generation to the next" (Matsumoto, 1997, p. 5). Cultural beliefs and norms help interpret the acceptability of individual characteristics and the types and ranges of interactions and relationships that are likely or permissible.

As it happens, the cultural and cross-cultural study of children's individual characteristics and their peer interactions, relationships, and groups has had a relatively brief history (see Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume, for a full discussion of culture). A central question asked in this body of work is rather intriguing: Do the "meanings" and significance of given social behaviors or relationships differ from culture to culture or are there cultural universals in interpreting given social behaviors and relationships? This question focuses on the long-held distinction between *form* and *function*; that is, the psychological "meaning" attributed to any given (form of) social behavior is, in large part, a function of the ecological niche in which it is produced and exhibited (Bornstein, 1995). Given that cultures vary in their customs and belief systems, any particular individual characteristic, social behavior, interaction, or relationship may be interpreted differently across cultures. For example, if a given behavior is viewed as acceptable, then significant others (including peers) will attempt to encourage its development; if the behavior is perceived as maladaptive or abnormal, then attempts will be made to discourage its development. Of course, the very means by which people go about encouraging or discouraging the given behavior may be culturally determined and defined.

Another significant issue is the degree to which cultures allow or encourage peer interactions and relationships (see Chen & Rubin, 2011 for relevant discussions). All in all, the majority of the world's inhabitants do not reside in culturally "Westernized" countries; as such, cross-cultural work on peer interactions, relationships, and groups requires careful attention (see Chen & Rubin, 2011, for reviews).

### **Interdependencies Between Levels of the Multilevel Model**

As noted earlier, a critical point of the model derived from Hinde (1987, 1995) is interdependency. Although the constructs and processes at a particular level are conceptually distinct from those at other levels, they are interdependent in the sense that constructs at one level can be constrained by or influenced by constructs at other levels.

We focus on the construct of social withdrawal as an example of an individual characteristic (other relevant

constructs such as aggressiveness, temperament, theory of mind, and race and ethnicity are reviewed in various chapters in this *Handbook*). It is known that the extent to which one is anxiously withdrawn in the company of peers depends, in part, on features at the level of the *individual* (e.g., inhibited temperament, physiological markers such as vagal tone, heart rate, emotion dysregulation; e.g., Calkins & Mackler, 2011). When anxiously withdrawn children *interact* with peers, they make fewer attempts to initiate *interaction*, their initiations tend to be relatively undemanding, and they are more likely to be met with noncompliance than are their nonwithdrawn age-mates. On the other hand, they are more compliant and submissive to their peers' social overtures (see Rubin, Coplan, & Bowker, 2009, for a relevant review). Furthermore, it has been demonstrated that anxiously withdrawn children are more likely than typical children to be rejected, excluded, and victimized by peers and to have friendships that are of relatively low quality (all indices of *relationships*; e.g., Bukowski, Laursen, & Hoza, 2010; Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006). Indeed, the extent to which one is rejected or excluded by peers and/or is friendless exacerbates *individual* trajectories of anxious, inhibited withdrawal (e.g., Booth-LaForce et al., 2012; Gazelle & Ladd, 2003; Oh et al., 2008).

Again, the interaction and transactions between levels is exemplified by the research indicating that anxiously withdrawn children who are rejected and/or friendless are at risk for developing negative thoughts and feelings about the self (e.g., depression, loneliness, hopelessness; Bukowski et al., 2010; Ladd, 2006; Nelson, Rubin, & Fox, 2005). Also, although anxiously withdrawn children appear to have as many friends as their typical age-mates (Ladd & Burgess, 1999; Rubin, Wojslawowicz, et al., 2006), they have been observed to interact with them in ways that vary from their typical age-mates (Schneider, 2009; Stewart & Rubin, 1995) and to think about their friendships differently than do their typical age-mates (Fredstrom et al., 2012; Schneider & Tessier, 2007). For example, anxiously withdrawn children are less talkative, more passive and submissive, and less competitive during their interactions with friends than nonanxiously withdrawn children (Schneider, 2009); and they also believe that their friendships are lacking in companionship, intimacy, and supportiveness (Rubin, Wojslawowicz, et al., 2006). In addition, socially withdrawn children are less mature in their conceptualization of the very meanings of friendship than are their typical age-mates (Fredstrom et al., 2012).

It is also the case that at the *group* level, both withdrawn children and their best friends are reported to be more victimized by the peer group (Hanish & Guerra, 2004; Rubin, Wojslawowicz, et al., 2006) and more submissive and low in the dominance hierarchy relative to their nonwithdrawn peers (Lease, Musgrove, & Axelrod, 2002). And finally, it is important to note that there are *cultural* differences in the ways in which behaviorally inhibited and shy-anxious children are perceived—by peers, parents, and teachers. In some cultures, inhibited, shy-withdrawn behavior is more prevalent than in others (e.g., Rubin, Hemphill, et al., 2006). And in some cultures, peers are more accepting (e.g., Chen, DeSouza, Chen, & Wang, 2006) or rejecting (e.g., Valdivia, Schneider, Chavez, & Chen, 2005) of their anxious withdrawn peers than in others. Of course, these differences may be accounted for by differing cultural “meanings” of the behavior. For example, in China, shy behavior is interpreted as an indication of reservedness, compliance, and conformity to adult expectations. These characteristics are considered typical and desirous. Given the significance attached to achieving and maintaining social order and interpersonal harmony within traditional Chinese culture, it makes sense that individuals are encouraged to restrain their personal desires and to behave in a sensitive, cautious, and inhibited fashion. Indeed, children who exhibit such tendencies are described as *guai hai zi* in Mandarin, which may be loosely translated as meaning “good” or “well behaved.”

At the same time, socially avoidant behavior in China is frowned upon. Cheah and Rubin (2004) found that when Chinese parents were asked directly how they would respond if they actually viewed their children behave consistently in a withdrawn fashion, they reported that mothers regarded such behavior in a very negative fashion. Cheah and Rubin argued that whereas shy, socially reserved sensitive behavior may eventually be conducive to harmonious group interactions, socially withdrawn behavior that removes the child from familiar others could undermine such goals. In this regard, socially withdrawn behavior could be perceived by Chinese mothers as “nonsocial” behavior that undermines the predominant collectivistic teachings of preschool caregivers, as well as the societal goals of group harmony and close interaction (Stimpfl, Zheng, & Meredith, 1997). Thus, as many others have noted beforehand, language and nomenclature are important in cross-cultural research. If one interviews or provides parents and children with questionnaires, a central rule of thumb must be that the construct one is interested in exists, has a label attached to it, and can be distinguished from related but different constructs. Social withdrawal,

social isolation, social avoidance, unsociability, preference for solitude, and shyness are related phenomena, and yet not considered the same constructs in the Western literature published in the English language (J. C. Bowker & Raja, 2011; Coplan et al., 2013; Wang, Rubin, Laursen, Booth-LaForce, & Rose-Krasnor, 2013); in cross-cultural research, one must surely ascertain whether given constructs go by the same or different names, or whether they, in fact, exist in various cultures.

### *Beyond Interdependencies*

It is important to recognize that at times the levels noted above can be antagonistic. The perception of one child as interacting frequently with aggressive behavior may prove attractive to a similarly inclined aggressive individual, thus promoting friendship (e.g., Bukowski, Sippola, & Newcomb, 2000); however, such a friendship dyad might prove to be a risk factor for effective functioning at the level of the group (Vitaro, Pedersen, & Brendgen, 2007).

A further implicit premise of the model is that children are motivated to function competently at each level of social complexity. At the level of the *individual*, children are motivated to successfully deal with several person- and self-related challenges such as functioning competently in a range of activities, developing a positive self-concept, being autonomous and feeling authentic, regulating one's emotions, and defending one's self from negative treatment by peers. At the level of the *dyad*, children are typically motivated to develop satisfying and lasting friendship relations and to avoid enmity. At the level of the *group*, most children are motivated to be accepted by peers, belong to a social network, and to be included in social activities. Inherent in this perspective is the tacit claim that a competent child or adolescent is one who can successfully interact at the level of the dyad *and* at the level of the group. Multilevel competence is challenging not only because it involves a potentially broad skill set but also because achievements at one level can lead to difficulties at others. For example, the initiation of a new friendship may lead to difficulties with an existing friendship network. Attainment of popularity may require adolescents to break-off friendships with less popular peers (Eder & Kinney, 1995). Managing interdependencies between the levels may be a critical defining characteristic of being identified as a socially competent individual.

As noted above, one challenge to Hinde's model is that some constructs appear at two levels simultaneously. Consider the construct of peer acceptance (i.e., the extent to which a child is liked by peers). It is one of the most

widely studied variables in peer relations research. In one respect, it is an *individual* level variable that refers directly to the status of a particular child. At the same time, it is a group level variable that indexes how many children in a given group like a particular peer. Accordingly, depending upon how it is conceptualized, a particular measure could be placed at a different level on the stratified model. Of course, this example (as well as others) does not invalidate the multilevel approach, but instead points to its complexity. Rather, this potential limitation can be addressed through the use of multilevel and transactional models that recognize the interdependence between individuals and the groups in which they are embedded (e.g., Kochenderfer-Ladd & Wardrop, 2001). Having a stratified structural model provides a way of thinking about peer variables that can aid in the development of comprehensive models to understand which aspects of the peer group are most important and how they affect well-being.

### Summary

To understand experiences with peers, researchers have focused on children's individual characteristics, the interactions they have with others, their involvements in peer relationships and groups, and the influences of culture on all of the above. Analyses within each level are, of course, scientifically legitimate and raise interesting questions. However, researchers have not always demonstrated a clear understanding of the important ways in which processes at one level are influenced by those at the others. As such, they have sometimes overlooked ways in which conclusions drawn at single levels of analysis can be limited. Clearly, research on peer relations would benefit from a consideration of (a) the underlying processes and motivations that account for the observed effects of peer experiences and (b) the differential significance of different forms of experience within the group (see also Wachs, Chapter 21, this *Handbook*, this volume).

Finally, our emphasis on multiple levels of analysis provides us with a basic conceptual model of social competence. Researchers have often treated measures of peer experiences at one level (e.g., peer acceptance; likeability) as indices of social competence. Our view is that social competence within the peer system refers to a child's capacity to engage effectively and successfully at each level of analysis and within his or her relevant culture. That is, a competent child will be able to (a) satisfy individual goals and needs successfully by interacting with peers in acceptable ways; (b) develop accurate and

productive means of understanding experiences in dyadic (e.g., friendships) and group relationships; (c) become engaged in relevant peer groups and participate in acceptable group-oriented activities; and (d) become involved in satisfying relationships derived from balanced and reciprocal interactions.

## STUDYING PEER INTERACTIONS, RELATIONSHIPS, AND GROUPS

To the extent that individual differences exist in children's adaptation or success with peers, such differences will be reflected in (a) their individual characteristics (e.g., gender; race/ethnicity; temperament; social cognitive skills); (b) their peer interactions; (c) their abilities to develop and sustain friendships; (d) their acceptance and status in peer groups; and (e) the groups within which they are members. Given that many of the individual characteristics relevant to children's peer interactions and relationships are reviewed in other chapters in this *Handbook*, we will leave that coverage to others. Herein, we examine procedures by which researchers have assessed peer interactions, relationships, and groups.

### Assessing Children's Peer Interactions

Although parents, clinicians, and archival data have all served as sources of information about the valence and nature of children's peer interactions, the most common sources are structured observations or the reports of other children or teachers.

#### *Observations of Behavior*

There is a long tradition of observing children in either naturalistic or laboratory-based play groups. For example, *observational procedures* have been used to index the frequency with which individuals (a) engage in particular behaviors (e.g., aggression, Bierman, Smoot, & Aumiller, 1993; deviant talk, Piehler & Dishion, 2007; reticence and behavioral inhibition, Rubin, Burgess, & Hastings, 2002; rough-and-tumble play, Smith, Smees, & Pellegrini, 2004; social pretense and rule-governed group games, Howe, Petrakos, Rinaldi, & LeFebvre, 2005; sharing, helping, and cooperating, de Guzman, Carlo, & Edwards, 2008; initiating or resolving conflict, Laursen, Hartup, & Koplas, 1996; gossiping, McDonald, Putallaz, Grimes, Kupersmidt, & Coie, 2007; talking negatively about oneself/ruminating, Schwartz-Mette & Rose, 2009); (b) adopt particular roles



vis-à-vis their partners (e.g., dominant versus submissive roles; teaching peers, learning from peers, and managing the behaviors of peers, Nelson et al., 2005); or (c) demonstrate social competence and interpersonal problem solving skills (Stewart & Rubin, 1995). Observations have also allowed the coding of the affect of interactions (positive, negative as well as the identity of the interactors (friends; children of the same/opposite sex; younger/older/same age). Typically, these observation protocols involve time or event sampling (e.g., Rubin, 2001).

Observational taxonomies have been used profitably to reliably distinguish between children along a variety of behavioral dimensions. In this regard, observations of peer *interaction* are used to identify *individual* characteristics. For example, observational taxonomies have been used to identify children whose behaviors (e.g., physical and relational aggression; anxious withdrawal) deviate from age-group norms. Observational taxonomies also have been used in studies to compare the social interactions of handicapped and typical children (e.g., Guralnick, Connor, & Johnson, 2011) and to compare the peer interactions of children in cross-cultural investigations (e.g., comparing the extent to which children from different cultures engage in sociodramatic play, Tudge, Brown, & Freitas, 2011).

Although observational methods offer many advantages over the assessments discussed next, they also have specific limitations. First, observations are time-, energy-, and money consuming. Whereas peer assessments can be conducted in minutes or hours, observations can require weeks or months of data collection. Second, as children get older, it becomes increasingly difficult to observe them during “naturalistic interactions.” Third, unless researchers carefully consider or control how social behavior is being influenced by setting demands, observation methods can lead to false conclusions of the willingness of certain individuals to engage in behaviors of interest. Fourth, observations may be reactive; for example, children who are aware that they are being observed may behave in atypical manners, perhaps suppressing negative behaviors or increasing the production of prosocial behaviors. Nevertheless, observational procedures represent “gold standards” that can be used to validate peer and teacher assessments of children’s social behavior. Recent reviews of these techniques can be found elsewhere (e.g., Rubin, Bukowski, et al., 2009).

### ***Peer Assessments of Social Behavior***

In lieu of direct observations, researchers have often relied on children for information about who behaves competently or incompetently (see Bukowski, Cillessen, &

Velasquez, 2012, for a review). Bukowski et al. have noted that there are several advantages of peer informants. First, as “insiders,” peers can identify characteristics of children and of relationships that are considered relevant from the perspectives of those who ultimately determine a child’s social status and integration within the peer group. Second, the judgments of peers are based on many extended and varied experiences with those being evaluated. Third, peer assessments of children’s behaviors represent the perspectives of many observers with whom the target child has had a variety of personal relationships. The chance that error will be introduced by some idiosyncratic aspect of any single reporter’s experience with the child is therefore correspondingly reduced.

In most peer assessment techniques, children are given a set of target behaviors and asked to nominate peers on the basis of a variety of behavioral roles or character descriptions (e.g., “shares with others”). Nominations received from peers are summed in various ways to provide indices of a child’s typical social behavior in the peer group. One commonly used peer assessment technique is the Revised Class Play (Masten, Morrison, & Pellegrini, 1985). Factor analysis of children’s nominations using this measure has yielded three behavioral factors—Sociability-Leadership, Aggressive-Disruptive, and Sensitive-Isolated. Recent advances in the use of peer assessments have provided a more refined articulation of the dimensions underlying children’s social behavior. For example, Rubin and colleagues (e.g., J. C. Bowker, Rubin, Buskirk-Cohen, Rose-Krasnor, & Booth-LaForce, 2010) developed a reliable and valid extension of the Revised Class Play to distinguish between different forms of social withdrawal and aggression, as well as to measure sociability, prosocial/altruistic behavior, exclusion, and victimization. Embedded items assess peer acceptance, perceived popularity, and rejection. An inherent problem with peer nomination techniques are potential biases due to variations in class size. A recently developed regression procedure provides a solution to this problem (Velasquez, Bukowski, & Saldarriaga, 2013).

A disadvantage of peer assessments is that once behavioral reputations consolidate they can be resistant to change (Hymel, 1986). Thus, even though a child’s behavior may have changed, their reputation for this behavior persists with peers. As such, the data reaching the researcher may not fully reflect the current state of “reality.” In addition, reputations are probably unduly influenced by infrequent but salient events (e.g., embarrassing social gaffs, poignant aggressive outbursts). Although characteristic of the child, the child’s reputation for this behavior may overstate

the frequency with which it appears in his or her social interchanges. Relatedly, there is evidence that children's recall of their peers' abilities and behavior is affected by their own behavioral reputation, level of peer status, age, and liking for the target; situational factors; and the target's gender, age, and sociometric status (e.g., Card, Hodges, Little, & Hawley, 2005). Finally, a main challenge to the study of peer assessments is the potential variance across cultural contexts in children's representations of social constructs (e.g., Chen & Tse, 2008).

### ***Teacher Assessments***

One advantage of teacher assessments over peer assessments is that the collection of data is more efficient and less time consuming. A second advantage is that, because they themselves are not members of the peer group, teachers may be more objective in their assessments of social behavior. On the other hand, teachers may bring with them an "adultomorphic" perspective that carries with it value judgments about social behaviors that might differ from those of children. Furthermore, teachers may carry with them biases that influence the ways in which they react to their pupils; such teacher reactions may strongly influence children's peer preferences and judgments (White & Kistner, 1992).

Many standardized teacher report measures presently exist and an excellent review of teacher ratings of child behavior may be found in Bierman (2004). Generally, these measures can be broken down into several socioemotional clusters or factors that fall along dimensions of social competence/sociability/likeability/leadership (Ladd, Herald-Brown, & Andrews, 2009); aggression/hostility/conduct disorder; (e.g., Polman, de Castro, Thomaes, & van Aken, 2009); hyperactivity/impulsivity; and anxiety/fearfulness/withdrawal (e.g., Coplan & Rubin, 1998).

### ***Agreement Among Sources***

Achenbach and colleagues (e.g., see Achenbach, 2006) have reported that the correlations between reports of children's behavioral problems average about .60 between informants seeing children under generally similar conditions (e.g., pairs of teachers; pairs of parents); .28 between different types of informants seeing the child under different conditions (e.g., parents versus teachers); and .22 between children's self-reports and reports by others, including parents and teachers.

Recently, De Los Reyes, Henry, Tolan, and Wakschlag (2009) have argued that informant discrepancies in reports of children's interactive behavior exist, in part, because

different informants observe children's behavior in different settings. As a result, parents and teachers (and peers) bring different perspectives of children into their appraisals. Parents are more likely to provide appraisals based on their experiences with their children at home or with family members; teachers may be better able to compare a given child with the many they have taught in the past, and thus provide a perspective that draws from a "normative sample"; and as noted earlier, peers have an "insiders" perspective on what a rated/nominated child is like when observed beyond the purview of parents and teachers (and trained laboratory observers). In this regard, De Los Reyes et al. (2009) have provided empirical support for an Attribution Bias Context Model in which it is suggested that when informant discrepancies arise, they indicate meaningful perceptual and situational differences among informants in how and under what circumstances they observe behavior.

From the perspective of De Los Reyes and colleagues, it may be appropriate to suggest that if it is the researcher's intention to examine how given children behave in school or in the surrounds of the school (e.g., the school yard; the school bus; the athletic fields and gym), then perhaps the most appropriate informants are peers. After all, peers possess the "inside" knowledge of what happens in and around the school and well beyond the vantage points of teachers and parents. Indeed, peers are likely to be the best informants about given children's behaviors during extracurricular activity as well. Of course, how this information is obtained must be guided by the ages of the child and his or her peers. However, the bottom line is that the goal is not to determine which assessment procedure yields the singular truth about the child, but to use what each one reveals about the child's functioning in particular areas or contexts.

### ***Assessing Peer Relationships***

#### ***Assessments of Friendship: Friendship Involvement***

The nature of the assessment of whether a child has a friend varies across periods of development. In early childhood, parents or teachers are often asked to identify whether a child is a friend of another child (Howes, 2009), and observations may be used to confirm that the two reported friends actually spend time together and share positive affect (Dunn, Cutting, & Fisher, 2002). In the assessment of friendships of elementary school-age children, children are thought to be the best informants on friendship. Therefore, children are typically presented with rosters or a set

of pictures of classmates and are asked to indicate which peers are their friends (e.g., Sebanc, Kearns, Hernandez, & Galvin, 2007). Similar procedures are used when studying the friendships of middle- or high school students, but researchers may simply ask adolescents to provide the names of their friends. Children and adolescents of all ages may also be asked to designate their “best” versus “good” friends. With these self-reported assessments of friendship, the pattern of friendship choices is subsequently examined to determine which friendship nominations are reciprocated or mutual and which children have mutual friends. Such assessments, in combination with peer nomination data, also may be used to identify the individual characteristics of children’s best and close friends (e.g., the aggressiveness or popularity of the friend; Ellis & Zarbatany, 2007; Wilson & Rodkin, 2011), and how the characteristics of children’s friends might impact their own adjustment (e.g., Vitaro et al., 2007).

However, there are several issues that may limit the validity of these measures. For instance, researchers do not typically provide informants specific criteria by which the presence of a friendship should be determined. Instead, it is often assumed that these informants share the researcher’s definition of friendship, which may not always be the case, and could impact the accuracy of the assessment. For example, a child may misinterpret the “meaning” of a friend and provide an over-inclusive set of nominations (e.g., by including the names of casual acquaintances). An example of such overinclusion may be gleaned from glancing at the number of “friends” adolescents and adults report having on their Facebook pages.

The “meaning” of a friend also may vary across cultures, which could lead to artificial differences in cross-cultural research studies. As French, Lee, and Pidada (2006) have shown, in cultures that ascribe considerable power or authority to the family system, the significance and meaning of friendship may differ substantially from the meaning of friendship in Western cultures. It is conceivable that friendship may even be seen as a threat to the expected structure and influence of the family. Accordingly, peer research needs to be increasingly sensitive to the cultural variations in the way that friendship is constructed and in the role that friendship is given in children’s lives.

Another issue concerns the restrictions that are often placed on who it is that children and adolescents can nominate as friends. For instance, limiting the total number of friendship nominations (e.g., three nominations), only allowing nominations for “best” friends, and restricting nominations to same-sex peers likely prevents many youth

from nominating peers who they consider friends and who may have a significant influence in their lives.

It is also common to limit friendship nominations to same-class, same-grade, or same-school peers (Berndt & McCandless, 2009). Although the same-classroom or grade peer group is typically a child’s most salient peer group, it is almost always the case that children have same-school friends who are outside of their own grade as well as friends who attend different schools (J. C. Bowker & Spencer, 2010; Kiesner, Poulin, & Nicotra, 2003). In sum, the restrictions placed on friendship nominations raises legitimate concerns; in many cases, it appears that the sizes of children’s and adolescents’ friendship networks are underestimated.

### *Assessments of Friendship: Friendship Quality*

Research indicates significant variability across friendship dyads in terms of relationship qualities or features (Bukowski & Hoza, 1989). That is, some friendships may be characterized by more positive relationship qualities, such as affection, companionship, aid, validation, and caring, than others. Significant variability in the extent to which conflicts occur, and are resolved, in friendships has also been documented (e.g., Simpkins & Parke, 2002). The most common approach to studying friendship quality involves assessment through children’s self-reports (for review, see Berndt & McCandless, 2009). Self-reports of friendship quality typically assess (a) the functions or provisions of friendships (e.g., degree of help and advice, intimate disclosure), (b) conflict and disagreements, and (c) the affective properties of the friendship (e.g., the degree of affection between friends). However, factor analyses consistently reveal that positive features of friendship (e.g., intimate disclosure) load on one factor and negative features of friendship (e.g., betrayal) load on another (Furman & Rose, Chapter 22, this *Handbook*, Volume 3).

Observational assessments of friendship quality are much less commonly used than self-report measures (e.g., Dunn et al., 2002; Simpkins & Parke, 2002), but may capture specific aspects of friendship that are less accessible through self-reports (e.g., the cognitive sophistication of play between friends; Simpkins & Parke, 2001; the extent to which gossip occurs; Menzer et al., 2012); and the ways in which friends communicate and co-construct solutions to social problems and issues, McDonald, Malti, Killen, & Rubin, 2014). As noted above, observational techniques are more labor- and time intensive than self-report techniques. However, the low-to-moderate associations between self-report and observations of the characteristics

of children's friendships (e.g., Simpkins & Parke, 2001) suggest that our understanding of the ways in which children's and adolescents' friendships differ qualitatively could be enhanced by studies that utilize both types of assessments.

### ***Assessments of Friendship: Cognitions About Friendship***

Finally, interview techniques have been the methodology of choice for investigators interested in children's beliefs and understanding of friendship. Examples of interview questions that assess friendship conceptions include: "What is a best friend?"; "What do you expect from a best friend?"; or "Why does a person need a good friend?" (e.g., Fredstrom et al., 2012). For example, Selman (1980) argued that children's friendship conceptions about various friendship issues (e.g., friendship termination) could be categorized into one of five developmental stages, which reflect increasingly complex perspective taking skills and social-cognitive sophistication. Hypothetical scenarios (in which the child is asked to imagine that the scenario involves a best or close friend) might also be used to study how children think about and evaluate various social situations involving close friends (e.g., conflict, betrayal, help-seeking; MacEvoy & Asher, 2012).

### ***Assessments of Peer Acceptance and Rejection: Children's Peer Acceptance***

Much of the increase in interest in children's peer relationships during the past 25 years can be traced to advances in *sociometry* (Bukowski et al., 2012). Techniques for measuring acceptance and rejection gave researchers a means of representing the extent to which a child is liked and disliked by peers. Much of the activity regarding sociometry is aimed at the challenge of developing valid and efficient measures of the two fundamental sociometric forces, specifically acceptance and rejection, and the measures that derive from them. *Acceptance* refers to how much a child is liked by peers; *rejection* refers to how much a child is disliked. The challenge of creating categorical measures results from the lack of independence between acceptance and rejection. These measures are neither the opposite of each other nor are they unrelated. Accordingly, a child high in acceptance is not necessarily low in rejection and a child high in rejection is not always low in acceptance.

A widely used method of assessing sociometric acceptance and rejection is to have children nominate peers in their classrooms or in their grades whom they "like" and "dislike." From these nominations, children are categorized into status groups based on the number of positive and

negative nominations they received from peers. Usually, only same-sex nominations are used to control for the other gender negative biases that occur in childhood.

From these nominations, derivative scores can be computed to index a child's general likeableness (i.e., sociometric *preference*) and the child's "visibility" in the peer group (i.e., sociometric *impact*). These scores have been used in various ways, most notably to make categorical assignments to the following sociometric groups: (a) *popular*—children who are high in acceptance and low in rejection (i.e., high impact, high preference); (b) *rejected*—children who are low in acceptance and high in rejection (i.e., high impact, low preference); (c) *neglected*—children who are low in both acceptance and rejection (i.e., low impact, mid-range in preference); (d) *average*—children who are average in acceptance and rejection (i.e., mid-range on both variables), and (e) *controversial*—children who are high in acceptance and rejection (i.e., high impact, mid-range on preference). Note that in the case of sociometric classifications, the term *popular* is used as a synonym for *accepted* rather than as an index of social prestige or status. Discussions of the stability of sociometric scores and classifications can be found in Bukowski et al. (2012).

Children's acceptance can also be assessed using *rating-scale* procedures. Rating-scale methods involve children rating each of their classmates (or a randomly selected group of grademates) on a scale (e.g., from 1 being *not at all* to 5 being *very much*) of how much they like to interact with each person. This method can be used to yield a continuous indicator of peer acceptance or to classify children into groups based on low, average, or high acceptance. An advantage of rating-scale measures is that each child in a class or grade receives an equal number of ratings rather than obtaining peer relationship data for only the prominent children in the group (e.g., those who happen to receive nominations for liking or disliking).

In contrast to the measurement of peer acceptance and rejection that is carried out with sociometric methods, *popularity* is measured with peer assessment techniques. Typically, in studies of perceived popularity, researchers ask children to nominate peers they believe to be most or least popular (Cillessen, 2009). Two basic premises, both related to the meaning that is ascribed to popularity, are implicit in this approach (see Bukowski, 2011, for a discussion of these issues). One is that the meaning of *popularity* is so well known to the participants that the inclusion of a definition is unnecessary to produce valid measurement of the construct. The second premise is that



there is a sufficient level of between-person agreement about the meanings of these words to justify the aggregation of nomination scores across individuals. The basic assumption of the peer assessment of perceived popularity is predicated on the assumption that all participants understand the meaning of the construct in the same way. It is not clear that the assumptions underlying these premises are always valid.

Nominations of peer-perceived popularity can be adjusted for biases due to variations in class size. Using these measures, children can be assigned to one of three possible groups: popular, unpopular, or average (all others). A continuous measure of perceived popularity may also be calculated by subtracting “not popular” from “popular” nominations, a procedure that makes the continuous measure of perceived popularity comparable to measures of social preference (e.g., Cillessen & Mayeux, 2004). Other researchers have asked teachers to nominate students who they believe are popular and have many friends (Rodkin, Farmer, Pearl, & Van Acker, 2006). Those who have simultaneously examined sociometric popularity and peer-perceived popularity have found that these two types of measurement may identify distinct groups of children and that correlations between acceptance and perceived popularity are moderate to strong (Cillessen & Mayeux, 2004; Hawley, 2003).

The use of sociometric techniques to assess the child's relationships within the peer group as a whole carries with it a number of limitations. Most noteworthy is the lack of practicality. Typically, sociometric procedures are used in schools because children spend the majority of their time in the company of peers. However, as noted earlier in our discussion of peer-nomination assessments of behavior, obtaining consent from everyone involved (i.e., school administrators, parents, teachers, children) is often difficult. If children nominate a classmate who has not agreed to participate, researchers are ethically bound not to use the data. Thus, for a researcher to obtain an accurate picture of a child's relationship status within any given classroom or grade requires obtaining consent from a large majority of the school-attending children (and parents; Cillessen, 2009).

### Assessing Peer Groups

The past decade has seen a substantial renaissance in concepts and methods related to the study of the peer group. These remarkable advances actually represent a return to many of the ideas and goals that were of interest

to researchers and theorists in the earliest waves of peer research in the mid-20th century. Indeed, early archival chapters on peer relations (e.g., Anderson, 1954) included extensive discussions of theory and available methods for studying the peer group *per se*. Since then, as attention has been directed to the levels of the individuals, interactions, and relationships, interest in the peer group as a phenomenon in and of itself has waned. This apparent lack of interest in the group is ironic as the classroom is frequently used as a natural context for research on peer relations. Although the classroom has been recognized as a “natural” context for experiences with peers, the properties of the context itself have been, until the last decade, largely overlooked by peer researchers. Although this neglect is not as extensive as it was a decade ago, it is still the case that the peer group *per se* receives relatively less empirical attention than is given to the individual, interactions, and dyadic relationships.

### *Why Has the Group Been Ignored?*

Several interrelated concerns point to the fundamental importance of assessing and accounting for the effects of the level of the group. The first derives from the statistical assumption that observations are independent from each other. Insofar as some children are grouped together with some peers (e.g., classroom peers) but not with others (e.g., children outside their classroom), this assumption of independence is violated when this group-based organization is not recognized and accounted for.

A second concern underlies the first. Because children within a group have a set of shared experiences, then they, as a group, differ from other groups of children in ways that may have consequences for their development. This second concern is predicated on the basic principles of theoretical models of social behavior and development. The need to integrate factors from multiple levels of social complexity has been a theme in social research for several decades beginning with Parsons and Shils (1951) and, closer to home, Bronfenbrenner and Morris (2006) and continuing to the present (e.g., Poteat, Espelage, & Green, 2007).

This lack of emphasis on group constructs (and measurement) can be traced to at least two intersecting limitations. One limitation is the lack of relevant theory to guide research on group contexts and their dynamics (Tseng & Seidman, 2007). This absence of theory may stem from several factors, including (a) the gap between the broad abstract features of theories that are designed to generally capture the fundamental components of contexts and the concrete and particular dynamics of specific environments

(see Bukowski & Lisboa, 2007, for a discussion); (b) the difficulty of using any particular theory, regardless of how expansive it claims to be, to explain the broad range of complex processes that make up social contexts such as classrooms; and (c) the need to match aspects of theory to available measurement and statistical tools, especially when methodological advances have outpaced the developments in theory (see Wachs, Chapter 21, this *Handbook*, this volume).

It is important to recognize that this conceptual limitation has two components. One has been the lack of explicit theory about how groups function to affect social development whereas the other is about the specific meaning of basic forms of group experience. This limitation is compounded by the historical tendency of peer relations research to be conducted by psychologists whose primary focus is on individual differences and on individual growth trajectories (e.g., those who may study equifinality and multifinality and yet neglect context and culture), because such theorizing at the group level may move many within the field of developmental science to ply their trade beyond their personal comfort zones.

The second limiting factor has been the lack of appropriate statistical tools for effective hypothesis-based integration of measures from different levels. Without user-friendly software to construct and evaluate complex multilevel models, research on the effects of groups was difficult. As Cairns (1983) noted several decades ago, the study of the group remained stuck in the 1930s and the sociograms produced by theorists such as Moreno (1934) were little more than premonitions of the abstract paintings of the 1950s and 1960s. Until recent developments in multilevel statistical software, distinguishing between and integrating effects at the level of the group and the level of the individual was nearly impossible. Most of these techniques were not possible until technical advances in computing power gave researchers the resources needed to make the complex calculations required to assess the multiple connections between group members. Currently advances in software have greatly facilitated the study of groups.

### ***What Are the Basic Features of Groups?***

Typically, the peer group context has been conceptualized according to considerations of structure and content (Gest & Kindermann, 2011; Tseng & Seidman, 2007). Whereas *structure* refers to the strength and patterns of associations between group members (Kelly, Ryan, Altman, & Stelzner, 2000), *content* refers to the behavioral and attitudinal

features or traits that characterize a particular group and that distinguish one group from another. Structure refers to the organization of the within-group links or forces that hold the members of the group together. Content refers to what the people in the group do, what they favor, and what they value.

Groups studied in peer relations research vary across a continuum anchored by these two phenomena. The ability to identify groups on the basis of *content* has been a mainstay of peer research for several decades. The identification of groups based on various “classic” parameters (e.g., means and standard deviations) has allowed researchers to compare groups of children who differ in the extent to which they show various peer related characteristics (e.g., aggression; Espelage et al., 2003). Although these techniques have been useful, they are not without their limitations. Such limitations include the methodological question of how to create cut-off scores on fundamental and derivative sociometric dimensions and the statistical problem of within group variability. In the past decade, researchers have replaced their use of these classic methods with latent variable models that can correct some of their drawbacks. Two techniques have been particularly useful: latent class analysis (LCA) and latent profile analysis. Each technique uses structural equation modeling to identify the presence of subgroups within a sample and to estimate the likelihood that each person in the sample belongs to each subgroup. The basic premise of these techniques is that unobserved subgroups exist within larger samples and that these latent subgroups are the categories of a categorical latent variable. These techniques offer many advantages such as reducing measurement error, avoiding the need to impose cut-off criteria on one’s data, and the capacity to combine measures from different latent constructs. An example of the application of LCA to a peer related variable can be found in Raufelder, Drury, Jagenowa, Hoferichter, and Bukowski’s (2013) identification of groups of young adolescents whose achievement behavior was differentially dependent on, or independent from, peer and teacher influence.

It is important to note that *content-based groups* are merely collections of individuals who have similar characteristics. They are not functioning groups in that each individual has an interpersonal connection to others. They are nevertheless important for peer research as they provide a means of identifying complex subgroups within the larger peer group context. Indeed, the most widely used categories in peer research have been content based. Sociometric groups comprise individuals with similar scores

on the basic dimensions of acceptance and rejection and derivative dimensions of impact and preference (Bukowski et al., 2012). For example, children in the “rejected group” have high scores on rejection and impact and low scores on acceptance and preference.

Descriptions of groups defined by *structural* features have been provided by Kindermann and Gest (2009). The purpose of identifying groups based on structural features is basically to find collectives of peers who have strong links to each other. The statistical programs used in the identification of structural groups employ dichotomous or, less frequently, continuous measures of connection between peers (e.g., friendship choice; affiliation). The algorithms maximize an index known as modularity (e.g., Kreager, Rulison, & Moody, 2011). Modularity comprises a ratio between within- and out-of-group connections. When all observed connections are between members of a group and none are to peers in other groups, the modularity score would be 1. Some of the most widely known procedures for identifying groups are UCINET (Borgatti, Everett, & Freeman, 2002), CROWDS (Kreager et al. 2011), and SIENA (Veenstra & Dijkstra, 2011).

Once a group has been identified, its internal structure and network characteristics can be assessed. For example, group size is a structural characteristic that simply requires quantification of members of the group. *Connectivity* can be assessed by examining group density, or the ratio of the number of within-group connections to the number of possible ties within that group. *Reciprocity* can be assessed by calculating the proportion of the within-group connections that are bilateral (e.g., mutual, reciprocated friendship choices). *Transitivity* can be computed by examining the proportion of within-group triads in which all three members are connected to each other. For examples of recent studies in which these indices were calculated and examined in relation to adjustment outcomes, see Dijkstra, Berger, and Lindenberg (2011), and Sijtsema et al. (2010).

Finally, group *cohesion* refers to the organization of the links between group members (Vacha, McDonald, Coburn, & Black, 1979). Cohesion can be measured objectively or with self-report measures. Direct or objective measures would assess the number and strength of the direct and indirect sociometric linkages between individuals. This measure would include an assessment of the overall level of liking among group members, an index of distance between group members in a class sociogram (Cillessen, 2009), and/or the proportion of mutual friendship nominations (Sherman & Cohen, 2002). Self-report measures could

include ratings of the classroom environment (Ghaith, 2003) or measures of collectivism and individualism such as those used by Santo et al. (2013).

## UNDERSTANDING PEER RELATIONSHIPS: FRIENDSHIP

Consistent with the premise that children’s experiences with their age mates will have a direct and powerful effect on well-being, researchers have devoted extensive attention to multiple forms of peer experience and their consequences for adjustment (see Bukowski et al., 2009, for a review). Whether particular types of peer experience are related to well-being is hardly an idle question. It holds importance for our understanding of the basic dimensions and processes of human nature, particularly the experiential mechanisms underlying adjustment, and for the development and implementation of policies and procedures to promote healthy development. Knowing which aspects of peer experience are most strongly associated with adaptive and maladaptive outcomes may be the most central question of peer research. Providing a clear answer to this question is not easy given that peer experiences occur across multiple dimensions whose significance are likely to vary across age and context. At the risk of simplification, peer experiences can differ in the extent to which they involve affect, behavior, or social inclusion.

In the next section, we describe research on the developmental significance of one specific form of children’s peer experiences, their *dyadic* relationships with peers. Children’s dyadic relationships with peers may take the form of friendships, romantic relationships, or antipathies. Theory and research on romantic relationships and mutual antipathies has been reviewed elsewhere (Card, 2010), including in this volume (Furman & Rose, Chapter 22, this *Handbook*, Volume 3). Therefore, we focus our review of dyadic peer experiences on children’s friendships.

The establishment and maintenance of close friendships represent challenging yet rewarding endeavors throughout childhood and adolescence. However, the constituent factors associated with friendship formation and maintenance vary with age; indeed, the very meaning of friendship undergoes developmental change. In the following sections we discuss the prevalence and functions of friendship; children’s changing understandings of friendship; friendship formation, maintenance, and loss; similarities between friends; children’s interactive behaviors with friends and nonfriends; gender-related issues in children’s friendships;

children without friends; and friendship and adjustment. An overriding theme is the significance of friendship in children's psychosocial development.

### Some General Observations

Friendships are common across the life span. From the existing corpus of investigations, one can safely conclude the following about friendships in childhood and early adolescence (see Bagwell & Schmidt, 2011, for an extensive review). To begin with, there appear to be three operationally defining features of friendship: First, each member of the dyad affirms the existence of the friendship. Second, the relationship derives primarily from mutual affection. Each partner views the other partner, and the relationship itself, as pleasant, fun, and likable. At the same time, the primary motivation for the relationship is not instrumental need. Third, the relationship is voluntary; it is neither obligatory nor prescribed.

Friendships serve several functions, such as providing emotional and social support, instrumental aid, intimacy, and affection; offering opportunities for intimate disclosure and for validation of interests, hopes, and fears; and providing prototypes for later romantic, marital, and parental relationships. Perhaps the most important function of friendships is to offer children an extrafamilial base of security from which they may explore the effects of their behaviors on themselves, their peers, and their environments (Rubin, Fredstrom, & Bowker, 2008).

Significantly, regardless of age or sex, most (60%–80%) youth have at least one same-sex mutually agreed upon friend (e.g., Laursen, Bukowski, Aunola, & Nurmi, 2007). The prevalence of friendship in adolescence is similar (Ellis & Zarbatany, 2007). Also, the prevalence of friendship appears to be similar across cultures (French, Purwono, & Rodkin, 2012). Another robust finding is that youth of all ages tend to form friendships with peers who are similar in sex (Mehta & Strough, 2009), race and ethnicity (McDonald et al., 2013), behavioral style (i.e., aggression, social withdrawal; Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998), and academic achievement (Altermatt & Pomerantz, 2003). Recent research has also revealed significant similarities between youth and their friends in internalizing symptoms (Giletta et al., 2011), externalizing problems (Hafen, Laursen, Burk, Kerr, & Stattin, 2011), popularity (Dijkstra, Cillessen, & Borch, 2012), social information processing (Spencer, Bowker, Rubin, & Booth-LaForce, 2013), religiosity (French et al., 2012), weight (de la Haye, Robins, Mohr, & Wilson, 2011),

and physical activity tendencies (Macdonald-Wallis, Jago, Page, Brockman, & Thompson, 2011).

### The Meanings and Understandings of Friendship

When asked to describe “a best friend” and expectations for friends, children of all ages describe best friendships as relationships that are characterized by reciprocity or mutual give and take (Bukowski & Hoza, 1989). Beyond this general agreement about the importance of reciprocity in friendships, however, there exist several notable developmental differences in how children and adolescents think about friendships. During early and middle childhood (4 to 8 years of age), friends are described as companions who share play preferences whereas during late childhood (10 to 11 years) they are described as having shared values, providing protection/instrumental aid and being loyal, and by early adolescence (11 to 13 years), friends are seen as sharing similar interests, making active attempts to understand each other, and willing to engage in intimate self-disclosure (Bukowski & Hoza, 1989; Schneider & Tessier, 2007).

Relatedly, Selman (1980) viewed children as mini-philosophers, for whom beliefs about friendship shaped both their friendship expectations and behaviors with friends. He identified six friendship issues: formation, closeness and intimacy, trust and reciprocity, jealousy, conflict resolution, and termination. Five developmental stages of friendship understanding were described within each issue, ranging from a view of friendship as a momentary physical interaction based on proximity, to an understanding that friendship develops through the integration of psychological dependency and independence. With development, children gain a better understanding of the psychological nature of friendship, acknowledge interdependency between friends, recognize the need to balance autonomy and intimacy, coordinate social perspectives, and show mutual respect for each other's viewpoint (Selman & Schultz, 1990). The developmental stage sequence proposed by Selman has been supported in a number of studies conducted in the North America and western Europe.

Of the limited extant cross-cultural research, it has been suggested that children come to understand the meanings of friendship in different ways and at different developmental rates across different cultures. For example, borrowing from the Selman taxonomy, Gummerum and Keller (2008) studied friendship reasoning among youth from China, Germany, Iceland, and Russia. For 7-year-olds, Russian



children were found to have the highest level of friendship understanding; Chinese and German youth were found to have the least sophisticated understanding of friendship. For 9-, 12-, and 15-year-olds, Russian *and* Chinese children were found to have the highest level of friendship understanding followed by the Icelandic and German children. These latter findings suggest that Chinese children appear to have a more dramatic change in friendship reasoning from Age 7 to 9. One might argue that the results reflect a stronger collectivistic, interdependency orientation in China and Russia—countries in which such group oriented, collectivistic phenomena, such as the organization Young Pioneers, are evident.

Taken together, it appears that children's understanding of friendship becomes increasingly sophisticated and their expectations become increasingly linked to intimacy with age. The underlying mechanisms that account for the developmental changes in children's conceptions about friendships are not clear, but possible explanations include developmental changes in perspective-taking abilities (Selman & Schultz, 1990), changes in children's understanding of reciprocity (Youniss, 1980), changes in cognition and relationship understanding due to accumulated social experience, and developmental changes in children's social needs (Rubin et al., 2008).

### Friendship Formation

There exist several different theories about with whom children and adolescents form friendships; such theories focus on issues pertaining to homophily (Byrne, 1971) and "social default" (Dishion, Andrews, & Crosby, 1995). As it happens, however, formation is a relatively understudied aspect of the friendship experience. This may be the result of the fact that at any given time, most children and adolescents are involved in at least one friendship with a history that encompasses a relatively brief period of time. Thus, empirically, it is challenging to find youth who are in the process of forming *new* friendships. Nevertheless, a study of "hitting it off" among unfamiliar preschoolers provides some insight into the friendship formation process (Gottman & Graziano, 1983), and so too do studies that consider new friendships that form following grade (Popp, Laursen, Kerr, Stattin, & Burk 2008) and school transitions (J. C. Bowker, Fredstrom, et al., 2010).

In an attempt to understand why some children form friendships and others do not, Gottman and Graziano (1983) paired unfamiliar preschoolers for three play sessions in one of the children's homes and audiotaped

their conversations. Of particular interest was whether certain coded conversational and social processes (such as communication clarity and connectedness, information exchange, and establishing common ground) explained which children "hit it off" or progressed toward forming a friendship, as assessed by mother-reports. The results produced a novel description of the friendship formation process. Specifically, information exchange, establishing a common ground, and minimizing conflict were found to be particularly important processes during the initial play session. However, as the children became better acquainted, other processes, such as self-disclosure, communication clarity, the exploration of similarity and differences, and conflict resolution, became increasingly predictive of which children were "hitting it off."

It is unknown whether this process model of friendship formation applies to older children and adolescents. However, recently, researchers have explored whether similarity *prior* to the formation of friendships predicts friendship formation across grade and school transitions. This research is guided by theory suggesting that individuals of all ages are more likely to be attracted to similar than dissimilar others (e.g., Byrne, 1971) and has demonstrated that youth and their soon-to-be friends are similar in peer victimization, popularity, aggressive behavior, delinquency, depression, and substance use *prior* to friendship formation (J. C. Bowker, Fredstrom, et al., 2010; Popp et al., 2008). In the Bowker, Fredstrom, et al. (2010) study, children who remained chronically friendless over time nominated dissimilarly behaved peers as their friends, suggesting that some children may fail at forming friendships because they direct their friendship bids to those who are unlike them (perhaps suggesting that they would prefer to be friends with those who they admire and who have positive characteristics that they, themselves, lack). Taken together, recent evidence indicates that one critical part of the friendship formation process for children and adolescents may be finding and pursuing similar peers. Of course, friendship is a dyadic process and some youth may not be able to choose and become friends with their preferred friends because they are rejected and disliked (Dishion et al., 1995; Hektner, August, & Realmuto, 2000). Youth who engage in prosocial and sociable behaviors appear to have the greatest opportunities to form new mutual friendships (J. C. Bowker, Thomas, Norman, & Spencer, 2011), perhaps because such behaviors improve the appeal and attractiveness of the youth as new potential friends who are enjoyable to be around.

### Friendship Maintenance and Termination

Once mutual friendships are formed, friendships at all ages show remarkable stability (Poulin & Chan, 2010). For example, two thirds of preschool-aged children who identify one another as friends do so again 4 to 6 months later (Gershman & Hayes, 1983). Berndt and Hoyle (1985) however found an increase in the stability of mutual friendships from Age 5 years (50%) to Age 10 years (75%) but not from Age 10 years to Age 14 years. In fact, it has been consistently found that only half of all young adolescent friendships are stable across one academic school year (A. Bowker, 2004; Wojslawowicz Bowker, Rubin, Burgess, Booth-LaForce, & Rose-Krasnor, 2006). This lack of increased stability during early adolescence may be accounted for by two factors. To begin with, friendships tend to become more exclusive with age—as such, children may allow some friendships to dissolve. As well, as children approach puberty, rapid changes in interests, and varying rates of development may result in a period of change in friendship choices (A. Bowker, 2004). However, the trend toward increasing stability in friendships continues into older ages (Cairns, Leung, Buchanan, & Cairns, 1995).

There is evidence suggesting that boys are more likely than girls to have stable same-sex (e.g., Hardy, Bukowski, & Sippola, 2002) and other-sex friendships (Chan & Poulin, 2007). Friendships involving individuals who interact both inside and outside of school are more stable than single-context friendships (Chan & Poulin, 2007). *Best* friendships tend to be most stable when they are positive in relationship quality (Branje, Frijns, Finkenauer, Engels, & Meeus, 2007), when the friendship partners are low in aggression and victimization (Hektner et al., 2000; Wojslawowicz Bowker et al., 2006), and when the friends are of the same-sex and same-race, and similar in behavior (Ellis & Zarbatany, 2007; McDonald et al., 2013). In addition, adolescents who have stable friendships are more similar to each other than those in unstable friendships in their choices of activities, delinquent behaviors, and such internal attributes as self-esteem and achievement motivation (e.g., Hafen et al., 2011). Due to socialization processes that accumulate over time, stable friendships appear to have greater influence on children's and adolescents' behavioral and psychological adjustment than unstable friendships (Brendgen, Vitaro, & Bukowski, 2000; Laursen, Hafen, Kerr, & Stattin, 2012).

Little research has focused specifically on friendship termination. J. C. Bowker (2011) reported that young

adolescents experience two types of best friendship termination or dissolution: (1) *complete dissolutions* (when a best friendship dissolves entirely and the adolescents no longer consider each other friends); and (2) *downgrade dissolutions* (when a best friendship becomes merely a “good” friendship). Downgrade dissolutions were more common than complete dissolutions, and more girls than boys experienced either type of friendship dissolution within the past several months. Previous research has revealed that friendship termination can place children and adolescents at risk for psychological distress and peer victimization, particularly if the dissolved friendship was not immediately replaced by a new friendship (e.g., Parker & Seal, 1996). However, J. C. Bowker (2011) found that it was young adolescents who experienced *downgrade* dissolutions (but not complete dissolutions) without best friendship replacement who reported the greatest loneliness. Thus, it appears that to fully understand the impact of friendship termination, a nuanced consideration of specific types of friendship dissolution, and new friendship replacement, may be required.

### The Effects of Friendship

The developmental significance of having friendship is clear. Studies consistently show that children with friends report higher levels of self-esteem and are less lonely than children without friends; also, having a friend promotes school satisfaction and academic engagement and protects children from peer victimization and its associated internalizing and externalizing costs (e.g., Erath, Flanagan, & Bierman, 2008). Friendships have also been found to protect children from hypothalamic-pituitary-adrenocortical axis dysregulation when negative peer experiences occur (Adams, Santo, & Bukowski, 2011; Peters, Riksen-Walraven, Cillessen, & de Weerth, 2011).

Children who are unable to form friendships, for whatever reason, appear to miss out on the social, psychological, and cognitive developmental benefits of interacting and negotiating with, and being supported by friends. Indeed, children without friends not only report higher levels of psychological distress (anxiety, depression, loneliness) than children with friends, but they are also consistently rated by their teachers, parents, and peers as lacking in social skills. The lack of social skills is likely both a cause and a consequence of their friendlessness. Significantly, approximately 15% of children are chronically without mutual friends; the results from several studies suggest that such children are at an elevated risk for internalizing

problems and peer victimization (Bowker, Fredstrom, et al., 2010; Ladd & Troop-Gordon, 2003). In addition, there is some evidence that the negative effects of being friendless during early adolescence may persist into early and middle adulthood. Bagwell, Newcomb, and Bukowski (1998) found that friendship involvement at 10 years predicted self-worth at 23 years.

In addition to examining the predictive associations between having mutual friendships and indices of adjustment/maladjustment, investigators have considered whether the *quality* of friendship explains variability in adjustment outcomes. In studies in which positive features of children's and adolescents' friendships are assessed (e.g., companionship, intimate disclosure, instrumental aid), these qualities are found to be concurrently and predictively associated with indices of psychological well-being (e.g., low levels of loneliness, depression, anxiety; peer victimization) and academic adjustment (e.g., Nangle, Erdley, Newman, Mason, & Carpenter, 2003). There is also some indication that having positive quality friendships buffers adolescents from the negative effects of group-level peer difficulties (e.g., low peer acceptance; Waldrup, Malcolm, & Jensen-Campbell, 2008), negative parenting (Lansford, Criss, Pettit, Dodge, & Bates, 2003), and qualitatively negative parent-child relationships (Rubin et al., 2004). Friendships become increasingly intimate and supportive as children transition into early adolescence, and it is during the early adolescent developmental period that the strongest associations between positive friendship quality and psychosocial adjustment indices have been found (Furman & Buhrmester, 1992).

There do appear to be positive and negative trade-offs associated with some high-quality, positive friendships for certain children and adolescents. For example, co-rumination has been shown to predict both positive friendship quality and internalized distress (anxiety, depression) during late childhood and early adolescence (Rose, 2002; Rose, Carlson, & Waller, 2007). In a study of young adolescents, the strongest associations between self-reported self-consciousness and indices of psychological maladjustment (being sensitive to rejection experiences; social withdrawal) were found for young adolescents with high-quality, positive friendships (J. C. Bowker & Rubin, 2009). These results are consistent with results from other investigations that have revealed that seemingly high quality friendships can foster or support some psychosocial difficulties and problematic behavioral styles (e.g., Murray-Close, Ostrov, & Crick, 2007). For some children and adolescents, positive quality friendships may foster

a strong sense of togetherness and intimacy, which could be problematic if it encourages and reinforces negative ways of thinking, feeling, and behaving (J. C. Bowker & Rubin, 2009; Rose, 2002). Taking such findings together, it appears critical to consider more than one friendship "factor" in studies of friendship and adjustment.

### *Individual Characteristics and Friendship Consequences*

The ways in which friendship impacts adjustment also depends, in part, on the individual characteristics of the child. For example, although they tend to be more disliked than other children, most aggressive children have a mutual best friend and are as likely as well-adjusted children to have mutual friends (Vitaro, Brendgen, & Tremblay, 2000). Aggression, however, seems to be related negatively to friendship stability (Hektner et al., 2000). Moreover, aggressive children are more likely than their nonaggressive counterparts to have aggressive friends and their friendships tend to be confrontational and antisocial in quality (Dishion et al., 1995).

High levels of relational aggression (e.g., threatening friendship withdrawal) within the friendship, and high levels of exclusivity, jealousy, and intimacy characterize the friendships of relationally aggressive children. In contrast, overtly aggressive children direct their aggression outside their friendship dyads, and report low levels of intimacy (Grotzinger & Crick, 1996). Significantly, associating with deviant friends and peers often leads to subsequent behavioral and social difficulties through a process known as *deviancy training* (Dishion & Peihler, 2009). Deviancy training refers to the processes of praise, encouragement, imitation, and expectancy by which children and adolescents increase the level of aggression or antisocial behavior in their peers. Essentially, deviancy training occurs when children model aggression for, and reward the aggressive behavior of their friends; these exchanges are thought to increase individual tendencies in aggressiveness and to strengthen ties between aggressive and substance-abusing friends and delinquent peers. In recent years, deviancy training has been detected in at-risk children and their friends as young as 5 years of age, and deviancy training during *childhood* and *early adolescence* has been shown to predict the development and maintenance of antisocial and delinquent behavior in early, middle, and late adolescence, in samples of both boys and girls (e.g., Snyder, Schrepferman, Bullard, McEachern, & Patterson, 2012).

As noted above, there is some evidence that shy/withdrawn youth are as likely as their nonwithdrawn peers to have mutual and stable best friendships during childhood

and early adolescence (e.g., Rubin, Wojslawowicz, et al., 2006). Shy/withdrawn children are often lacking in social skills (Rubin, Coplan, et al., 2009). Yet, these behaviors do not appear to impact the formation and maintenance of their friendships, likely because shy/withdrawn youth form friendships with similarly withdrawn and similarly victimized peers (Rubin, Wojslawowicz et al., 2006). However, their shared internalizing problems and group-level peer difficulties may not allow for a positive and supportive friendship experience (Rubin, Wojslawowicz et al., 2006). In support of this notion, Oh et al. (2008) found that having a withdrawn friend predicted increases in social withdrawal during late childhood and into early adolescence. Yet, any mutual best friendship, especially if it is stable, may help withdrawn children navigate difficult times of transition and school change (Oh et al., 2008).

### Other-Sex Friendships

Friendships with other-sex peers during early and middle childhood and even early adolescence are so rare that they are often excluded from study (e.g., Peters, Cillessen, Riksen-Walraven, & Haselager, 2010). However, researchers have shown that throughout the adolescent period, the percentage of adolescents with other-sex friends (as distinct from romantic relationships) increases significantly (Arndorfer & Stormshak, 2008).

Same-sex friendships are generally perceived as more intimate than other-sex friendships during early adolescence, but other-sex friendships become increasingly intimate during the adolescent years as interaction and intimacy with other-sex peers increases in importance. Despite this increase in intimacy, it is still the case that the majority of other-sex friendships during adolescence are not considered to be best friendships (Poulin & Pedersen, 2007).

As other-sex friendships become more common, it is not surprising that they also become more influential on such adjustment outcomes as antisocial and delinquent behavior (e.g., Arndorfer & Stormshak, 2008). The risk associated with having other-sex friends has been shown to be stronger for girls than boys (e.g., Poulin & Pedersen, 2011), perhaps because girls appear to be more susceptible to peer influence in general and their other-sex friends tend to be older, with longer histories of delinquency. Indeed, the developmental risks of having other-sex friends is likely explained by the fact that most other-sex friends are older peers, with more experience with rule breaking and antisocial behavior. One recent exception to the suggestion that other-sex friendships during early adolescence

are “risky” derives from a study by Bowker and colleagues (Bowker, Thomas, Spencer, & Park, 2013). These researchers found that having an other-sex (same-grade) friend protected young adolescents who are sensitive to rejection, based on their physical appearance, from feelings of social anxiety. Notably, this protective effect was found after controlling for the effects of same-sex best friendship involvement and same-sex peer acceptance. The authors posited that having other-sex friendships during early adolescence may provide felt security regarding one’s appearance and foster social confidence, whereas lacking such friendships may exacerbate concerns about possible appearance-based rejection by other-sex peers. Thus, there may be developmental trade-offs associated with other-sex friendship involvement during early adolescence. Such friendships may contribute to delinquency but protect some adolescents from emotional and psychological difficulties.

## UNDERSTANDING PEER RELATIONSHIPS: PEER ACCEPTANCE, REJECTION, EXCLUSION, VICTIMIZATION, AND POPULARITY

For several decades, research on the group-level of social complexity was largely focused on the affective dimensions of peer experience, specifically the variables known as *acceptance* and *rejection* and the secondary measures (i.e., *impact* and *social preference*) derived from them (see Bukowski et al., 2012, for recent review). During the past decade, attention has been directed away from the affectively laden dimensions to the behavioral based dimension of *victimization* and the inclusion-related construct of *exclusion*. The distinctions between these constructs are not trivial in that they represent fundamentally different forms of experience and present different implications for intervention and prevention procedures.

### Peer Acceptance and Rejection

#### *Factors Underlying Acceptance and Rejection*

Children who are high in acceptance and low in rejection tend to have the social cognitive prowess that enables them to facilitate the initiation and formation of relationships. They are also skilled at paying attention to their peers in a manner that promotes the continuity of their interactions. In regard to particular forms of behavior, when entering new groups, well-accepted children are more likely than others to take the group’s frame of reference and say



something on topic without drawing undue attention to themselves; they are not disruptive of the group's activity (Putallaz & Gottman, 1981). In addition, well-liked children typically negotiate, compromise, and otherwise deal with peer conflict in competent ways (e.g., Troop-Gordon & Asher, 2005). They are seen as cooperative, friendly, sociable, prosocial, and sensitive by peers, teachers, and observers (e.g., Chen & Tse, 2008). They tend to be good athletes, good students, and have good senses of humor (e.g., Asher & McDonald, 2009). When accepted children do engage in aggressive behavior, it tends to resemble assertiveness rather than disruptiveness or harmful forms of action that are likely to impede the goals of their peers (Newcomb, Bukowski, & Pattee, 1993).

The overriding conclusion regarding rejection is that its primary antecedent is aggression. Relative to their more well-accepted peers, those who are rejected participate more often in three particular forms of aggression—disruptiveness, physical aggression, and negative behavior (e.g., verbal threats). These findings are especially strong for younger children (Cillessen & Mayeux, 2004). It is also the case that withdrawn behavior has been linked with peer rejection in numerous studies (e.g., Ladd, Kochenderfer-Ladd, Eggum, Kochel, & McConnell, 2011; Oh et al., 2008). It is argued that socially withdrawn children are rejected by peers because their demeanor runs contrary to age-specific norms and expectations for social interaction and relationship- and group-involvement (Rubin et al., 2009). Furthermore, researchers have argued that atypical behavior becomes more salient to the peer group with increased age, which may explain why the association between social withdrawal and peer rejection steadily increases throughout childhood (Ladd, 2006).

One reason that it is often difficult to arrive at a strong conclusion about the specific causes of acceptance and rejection derives from contextual variations. Groups have norms, or standards, regarding the “goodness” of particular acts. The acceptability of a behavior, and of the child who displays that behavior, is determined by whether the behavior conforms to the group's norms. If a behavior is universally valued, it should correlate with peer acceptance; if the normalcy of a behavior varies across groups, the extent to which the behavior is linked to acceptance and rejection should vary across these groups also. It is this logic that has provided the basis for much of the research on group and cultural variations in the antecedents and correlates of acceptance and rejection (see Chen & Rubin, 2011, for reviews).

### *The Consequences of Rejection: Externalizing Problems*

Results of longitudinal studies have consistently indicated that peer rejection in childhood predicts a wide range of externalizing problems in adolescence and beyond, including delinquency, conduct disorder, attention difficulties, and substance abuse (e.g., Prinstein, Rancourt, Guerry, & Browne, 2009). These findings are not particularly surprising given the well-established link between aggression and peer rejection, and especially given that aggressive rejected children are more likely to remain rejected over time. Importantly, research has shown that early peer rejection provides a unique increment in the prediction of later antisocial outcomes, even when controlling for previous levels of aggression and externalizing problems (e.g., Miller-Johnson, Coie, & the Conduct Problems Prevention Research Group, 2002).

Dodge et al. (2003) also found a developmental pathway in which peer rejection led to more negative information processing patterns (i.e., hostile cue interpretation), which led to increased aggression. Additionally, Prinstein and La Greca (2004) found that girls' childhood aggression predicted later substance use and sexual risk behavior, but only for those girls who were disliked or rejected in junior high school. Given that changes in peer acceptance tend to precede changes in aggression over time, but not vice versa, one can begin to understand the truly *transactional* nature of the relation between peer rejection and the development of externalizing problems over time (Prinstein et al., 2009).

Certainly part of the association between rejection and externalizing problems involves the network of peer involvement experiences by rejected children (e.g., Espelage et al., 2003). Involvement in a deviant peer group exposes them further to deviant models and restricts their opportunities to interact with nondeviant peers. Furthermore, deviant peers may reinforce delinquent acts through their positive responses to deviant behavior. For example, Brendgen et al. (2000) showed that rejected children were more likely than other boys and girls to associate with delinquent peers and that these associations accounted for their subsequent delinquency. These mechanisms also appear to account for the development of substance abuse problems (see Dishion & Piehler, 2009, for a review).

### *The Consequences of Rejection: Internalizing Problems*

Researchers have explored the unique role of peer rejection in the prediction of internalizing problems (for a review,

see Prinstein et al., 2009). In general, the strongest conceptual model that explains the relation between peer rejection and the subsequent development of such internalizing difficulties as anxiety, depression, loneliness, and negative self-regard is a transactional one (e.g., Parker et al., 2006). Consistently, researchers have reported that extremely shy and/or anxiously withdrawn children who are also rejected by their peers are at greater risk for the subsequent development of internalizing difficulties than are either withdrawn-non-rejected or non-withdrawn-rejected youth (see Rubin, Coplan, et al., 2009, for relevant discussion). In fact, those children who are, for whatever reason, socially withdrawn and whose peers actively dislike them have been shown to be at risk for the subsequent development of anxiety, depression, loneliness, and negative thoughts and feelings about themselves (e.g., Boivin, Hymel, & Bukowski, 1995). Socially withdrawn youth value peer relationships and yet struggle with peers. In addition, they are well aware of their social difficulties (Boivin et al., 1995). Thus, it is likely that withdrawn youths' shy and timid behaviors lead to peer rejection (and other peer difficulties), which in turn contribute to negative self-perceptions and increasing internalizing problems, and then, increasing withdrawn behaviors and problems with peers.

### ***The Consequences of Rejection: Academic Adjustment***

It has been shown that adjustment to school derives from several aspects of children's relationships with peers. Wentzel and Asher (1995) found that rejected/aggressive students, relative to average and rejected/submissive children, showed little interest in school, were perceived by teachers as dependent, and were seen by peers and teachers as inconsiderate, noncompliant, and prone to causing trouble in school. These findings were consistent with longitudinal findings reported by Ollendick, Weist, Borden, and Greene (1992) who showed that children who were actively disliked by their peers were anywhere from two to seven times more likely to fail a subsequent grade than better accepted children. Furthermore, Ladd, Herald-Brown, and Reiser (2008) have found that chronic peer rejection during the period between kindergarten and sixth grade predicts decreased growth in school participation and engagement. Given these longitudinal connections between peer rejection and later poor school performance, it is not surprising to learn that children who have troubled relationships with their peers are more likely to drop out of school than are other children (Ollendick et al., 1992).

## **Victimization**

### ***Victimization Versus Rejection: Definitional Issues***

Much of the research on victimization contrasts sharply with research on peer rejection. One obvious difference derives from the historical trajectories on the topics of peer research. Whereas research on acceptance and rejection attracted the attention of peer researchers during the 1980s and 1990s, interest in these constructs has been less expansive since the turn of the century as attention has shifted to such topics as victimization and exclusion. This increased interest in victimization has not been restricted to academic researchers; tragic victimization-related deaths and injuries are detailed almost daily in traditional and electronic media.

A second difference concerns the issue of definition. Although the definitions of acceptance and rejection are well known and relatively clear, definitions of victimization often vary from one study to another. Salmivalli and Peets (2009) recently argued for a definition of victimization that would emphasize behavioral features. They referred to victimization as the experience of being the target of any form of aggressive attack. Their emphasis on the component of attack appears to indicate that victimization is intentional, direct, and targeted. Despite the apparent specificity of this definition, the breadth of the experiences that can fall within this definition is substantial. Although inclusive definitions can have their advantages, too much breadth can be problematic as it brings together phenomena that derive from very different dynamics and whose effects occur via different pathways. For example, a broad definition of victimization could include acts of physical violence as well as moments of exclusion. In addition to the differences in their antecedents and effects, these experiences are likely to be affected by very different forms of intervention. This is not to say that a more specific set of definitions should be formulated. Instead it points to the importance for researchers to be continually cognizant of the problematic features inherent in broadly defined constructs. There is already some evidence of the value of distinguishing between the constructs of victimization and exclusion (Buhs, Ladd, & Herald, 2006).

A third distinction between the affectively laden construct of rejection and the construct of victimization concerns the multiple domains in which victimization is manifested. Just as there are multiple forms of aggression (e.g., physical, relational) and social withdrawal (anxious withdrawal, preference for solitude), there are multiple

forms of victimization and different types of victimized children. For example, some children appear to be victimized because they are aggressive and provocative elicitors of bullying. Others are withdrawn, submissive, passive “easy targets,” and do not explicitly invite victimization (Hanish & Guerra, 2004).

Moreover, victimization can occur under different contextual circumstances that vary in the degree to which they involve face-to-face interaction. Whereas victimization in a classroom or schoolyard requires direct contact between the bully and the victim, the cyber context does not require the victimizer to see the victim. This lack of direct contact is likely to limit the extent to which natural empathic responses inhibit bullying.

A fourth difference between sociometric rejection and victimization concerns their occurrence at difference levels of social complexity. Victimization can occur at the level of the dyad (Card & Hodges, 2006) and the group (Rosen et al., 2009). In contrast, sociometric rejection refers to the extent to which a child is liked within the peer group as a whole.

### *Predictors and Consequences of Victimization*

Two general conclusions can be reached about the factors that appear to predict both rejection and victimization. As noted earlier, the first is that these peer experiences are associated with aggression and social withdrawal (Salmivalli & Peets, 2009). Children who have elevated scores on these dimensions appear to be at highest risk for both victimization and rejection. Second, victimization and rejection are known to be similarly associated with other variables at the level of the individual and at the level of interaction. These factors include such intrapersonal phenomena as anxiety, low self-worth, and depressive symptoms as well as such interpersonal factors as friendlessness (Salmivalli & Isaacs, 2005). Although a comprehensive model to explain the processes that account for individual differences in rejection and victimization has not been developed, one assumes that it would emphasize the importance of characteristics that disrupt the goal-oriented behaviors of individuals and groups and that minimize the degree to which a person can defend or protect him- or herself.

Given that rejection and victimization are related to similar antecedents and insofar as both represent negative experiences within the peer group, it is not surprising that measures of these constructs are inter-related both concurrently and prospectively (e.g., Ladd & Troop-Gordon, 2003). Perhaps the best assessment of the prospective associations between victimization and rejection can be

found in Salmivalli and Isaac's (2005) longitudinal study of these constructs in a sample of young adolescents. They found that whereas peer rejection was related to subsequent victimization after the initial levels of victimization had been accounted for; victimization had no effect on subsequent rejection. Apparently rejection is an antecedent of victimization whereas victimization does not appear to affect subsequent rejection. Thus, rejection may be at the core of children's negative peer experiences.

In general, it has been found that being victimized by peers predicts internalizing problems (e.g., anxiety, depression, loneliness; Reijntjes, Kamphuis, Prinzie, & Telch, 2010), externalizing problems (aggression) as well as school adjustment problems (truancy; school participation; Reijntjes et al., 2011). However, much like rejection, the relations between victimization and negative outcomes can be described best as following a transactional course (e.g., Ostrov, 2010). For example, as noted above, there are groups of aggressive children who invite victimization (provocative victims); these children appear to be at the greatest risk for the development of both externalizing and school-related difficulties). Other groups of passive, submissive, withdrawn victims are at greatest risk for the development of hopelessness, helplessness, and depression. When negative events befall this latter group, they blame themselves for their plights, and the combination of passivity, submissiveness, victimization, and self-blame predicts problems of an internalizing nature (Salmivalli & Peets, 2009).

### *A Note About Interventions*

Perhaps the most striking difference between rejection and victimization is not seen in studies of their correlates, causes or consequences, but are seen instead in how researchers have developed interventions to minimize their occurrence. Procedures aimed at minimizing rejection have typically focused on the individual (see Bierman, 2004). The goals of these interventions are to improve the rejected child's social skills and/or to minimize predispositions (e.g., aggressive or withdrawn behavior; social cognitive deficits and information processing biases) that are believed to be the causes of the behavior (e.g., aggression; social withdrawal) that causes the child's rejected status. The implicit assumption of the individual-level intervention focus is that causes of rejection are situated within the child. Elimination of rejection is achieved by altering the causes and prevalence of the child's atypical behavior.

Interventions designed to eliminate victimization have typically taken a very different approach by emphasizing

properties of the social context. Context-focused interventions are based on the premise that victimization is a systemic problem that results from causes at the level of the individual, dyad, and group. Accordingly, there is a need to reform the context rather than to simply change the victim. Two exemplary interventions are the Kiva study (Kärnä et al., 2011) and the classroom reorganization study conducted by van den Berg, Segers, and Cillessen (2012). The Kiva study aimed at students, teachers, and parents. It is process-oriented in the sense that it consists of well-prepared activities to engage student participation. It also takes advantage of web-based materials. At the level of the person, it aims at empathy, self-efficacy, and supportive efforts to help victimized peers. The efficacy of this program has been demonstrated in a thorough evaluation (Kärnä et al., 2011). The van den Berg et al. (2012) project was much narrower in its approach. Its point of departure was the long-standing recognition that positive aspects of interpersonal experiences are inversely related to social distance. Their intervention consisted of altering classroom-seating arrangements such that peers who had a negative relationship would sit closer to one other. The observed effects of this intervention on victimization were roughly equal to the effect sizes observed with the more elaborate Kiva study.

## Exclusion

Less attention has been devoted to the study of peer exclusion than to peer victimization. Whereas victimization refers to negative, harmful behavior directed to an individual, peer exclusion refers to the processes by which someone is kept out of, or isolated by a group. In the following section, we discuss issues related to definition, the link between peer exclusion and other peer processes, and its association with other aspects of development.

### Defining Exclusion

Peer exclusion actively deters an individual from participating in group activity (e.g., Killen, 2007; Malti, Killen, & Gasser, 2012). Exclusion may be enacted by an individual or a group of individuals and may involve direct or indirect behaviors. For example, when an individual requests joining others in a play activity, the group may clearly decline and ignore their peer. Or, exclusion may be indirect and subtle. For instance, a child may speak to a group of peers who “respond” by pretending not to hear the child. Or, a child might find that the rules of a game have been intentionally altered so that he or she is no longer included. In each of

these examples, the behaviors have the effect of preventing the child from joining the group activity, thereby isolating him or her.

Although the act of exclusion has been studied as a type of relational or social aggression (Nixon, Linkie, Coleman, & Fitch, 2011) or isolation or neglect by peers (e.g., Elsaesser, Gorman-Smith, & Henry, 2013), findings from a recent observational study of preschool-aged children suggest that many instances of peer exclusion do not involve relationship manipulation or rumor spreading, two of the defining features of relational/social aggression and victimization (Fanger, Frankel, & Hazen, 2012). Moreover, although the terms *peer exclusion* and *peer rejection* are often used interchangeably, empirical findings suggest that the two constructs are related but distinct. Peer exclusion is a behavioral manifestation of peer rejection that helps to explain why peer rejection can be so damaging to the developing child (e.g., Buhs et al., 2006; Gazelle & Ladd, 2003). In other words, children exclude peers they actively dislike. Finally, ostracism is a very similar construct to peer exclusion; Williams (2007) defined ostracism as ignoring and excluding others. However, the study of ostracism originated in the field of social psychology, and to date, most studies of ostracism have focused on adults, with several notable exceptions (e.g., Gross, 2009). Another difference is that theory and research on ostracism tends to focus on being ostracized by *unfamiliar* others whereas the emphasis in research on peer exclusion tends to involve experiences of being left out or isolated by *familiar* age-mates.

Finally, much of the extant developmental research on peer exclusion tends to focus on how children reason about the isolation of others based on such individual characteristics as gender, race, age, or ethnicity (e.g., Killen, 2007) and how they think about in-groups and out-groups (Abrams & Rutland, 2008). This research is guided by several theoretical models, including social-cognitive domain theory and developmental subjective group dynamics model (reviewed in detail in Killen & Smetana, Chapter 17, this *Handbook*, Volume 3).

### Operationalizing Exclusion

Typically peer exclusion has been studied for three reasons. First, investigators have sought to determine whether peer exclusion is related to individual child characteristics (e.g., social withdrawal, aggression), and such adjustment outcomes as peer victimization. In these studies, children are asked to nominate same-grade or same-classroom peers in their schools who are left out of group activities, ignored



and avoided by classmates, and whose social initiation bids are frequently refused (e.g., Avant, Gazelle, & Faldowski, 2011; Buhs et al., 2006). Children who receive many nominations are identified as highly excluded by their peers. Given that exclusion is a peer group phenomenon that may often occur away from sight-lines of adults, it has been suggested that children are likely the most knowledgeable purveyors of information about who it is that is left out and ignored. But, the results of one study revealed modest agreement among peer-, self-, teacher-, and observer-reports of peer exclusion during middle childhood, suggesting that children, teachers, and objective observers may witness some of the same episodes of peer exclusion (Spangler & Gazelle, 2009). Other recent examples of studies that utilized teacher and/or other observations of peer exclusion include Fanger et al. (2012) and Murray-Close and Ostrov (2009).

Investigators who seek to determine how children *reason* about social exclusion typically present children with hypothetical scenarios in which social exclusion might occur. The characteristics of the child who might be excluded and the child(ren) who might do the excluding vary, depending on the investigators' questions of interest (e.g., adolescents' reasoning about interracial exclusion, Killen, 2007).

When in-group and out-group exclusion are of interest, hypothetical scenarios are also typically utilized, but the scenarios involve *normative* targets (such as Emily and Jack who are going to a school summer fair because they think the activity is important for the other children and their school and because they think it will be fun) and *deviant* targets (such as Alex who is not going to the fair because he or she would rather stay home; Abrams, Palmer, Rutland, Cameron, & Van de Vyver, 2013). Scenarios are typically followed by questions assessing children's own thoughts and feelings about the normative and deviant targets, their perceptions of other children's thoughts and feelings about the targets, and children's reasoning about other children's thoughts and feelings (e.g., "Why do you think the other children from your school would feel that way about [normative/deviant target]?" [Abrams et al., 2013]).

Finally, a third goal of exclusion research is to assess how children think and feel about and cope with peer exclusion when they actually experience it. This research is typically experimental, with children being exposed to simulated peer exclusion. Examples of this approach can be seen in the recent work on ostracism during childhood and adolescence (e.g., Gross, 2009), which most commonly utilizes the *cyberball* paradigm that was designed

for adults (e.g., Williams & Jarvis, 2006). In the cyberball game, participants are informed that they will play a ball tossing game on the computer with two virtual players (not actual players, but rather, part of the virtual game). The game begins with one of the "players" throwing the ball to the participant; the participant then chooses to which player he or she should "pass" the ball. There are two conditions: (1) the *ostracism* condition in which the participant receives the ball twice at the start of the game, and thereafter, never receives it again; and (2) the *inclusion/control* condition in which the participant receives the ball approximately the same amount of time as the other players in the game. Afterwards, participants are typically asked questions about how they felt during the game (to assess whether the manipulation was effective), additional neurocognitive (brain activation; Guyer et al., 2012), psychological (self-esteem, Gross, 2009) or behavioral (e.g., text messaging with others, Gross, 2009; food intake, Salvy et al., 2012) outcomes of interest are measured, and debriefing occurs. Another computer-simulated program used to assess peer exclusion is the Virtual School technique designed to assess the neural mechanisms mediating individual differences in social responses to uncertainty and exclusion in social contexts (Jarcho et al., 2013).

### *Who Is Excluded and Why?*

The construct of exclusion merits special attention in the study of social withdrawal. Socially withdrawn children and adolescents spend considerable time alone and away from peers because they actively remove themselves from and avoid their peers. Their withdrawal may be motivated by fear or anxiety or by strong preferences for solitude. Regardless of the motivation for solitude, early research on social withdrawal emphasized the importance of distinguishing socially withdrawn youth from peer excluded or isolated youth (e.g., Rubin & Mills, 1988). And yet, in peer relations research, exclusion is often considered as a correlate or outcome of social withdrawal (e.g., Avant et al., 2011; Gazelle & Rudolph, 2004).

The association between social withdrawal and peer exclusion appears to be strongest when two specific types of social withdrawal are considered: anxious-withdrawal or shyness (withdrawal that is motivated by fear or anxiety) and avoidance (withdrawal motivated by strong desires to be alone; Rubin, Coplan, et al., 2009). A small number of longitudinal studies provide evidence that the linkages between anxious-withdrawal and peer exclusion may be bidirectional such that anxious-withdrawal predicts increasing peer exclusion and peer exclusion predicts

increasing anxious-withdrawal over time (e.g., Gazelle & Ladd, 2003).

Social withdrawal is not the only behavioral factor associated with peer exclusion. A growing number of studies indicate that aggressive youth are also likely to be excluded by their peers (e.g., Ostrov, 2010). Both physical and relational aggression have been associated with relational victimization, and such relations have been found in early and middle childhood, as well as early adolescence.

The explanation for why socially withdrawn children are excluded by peers appears to be that their shy and timid behaviors are viewed as atypical and counter to social norms and expectations for peer interaction and relationship and group involvement (Rubin, Coplan, et al., 2009). Aggressive children are believed to be kept from group activities and avoided because their behaviors can be harmful and damaging (Salmivalli & Peets, 2009). Of course, the common feature explaining the associations between social withdrawal, aggression, and peer exclusion is the deviant or atypical nature of the behavior, a notion that dovetails well with the theory and research on children's and adolescents' reasoning about when intergroup exclusion is legitimate (see Killen & Smetana, Chapter 17, this *Handbook*, Volume 3).

Regardless of the reasons for peer exclusion, numerous studies, using both experimental manipulations and peer nomination assessments of exclusion, have revealed negative behavioral, academic, and psychological outcomes associated with being left out and ignored by peers (Avant et al., 2011; Buhs et al., 2006; Peake, Dishion, Stormshak, Moore, & Pfeifer, 2013). Even though the negative peer treatment may not be as direct as peer victimization, peer exclusion appears to have a negative impact on how children feel about themselves and their social worlds and to impair regulated coping efforts (Peake et al., 2013; Salvy, Bowker, et al., 2012). Such findings suggest that this construct deserves increased attention in the peer relations literature.

### Perceived Popularity

Although the word *popularity* has appeared in scholarly papers on peer relationships throughout the history of this research domain, the focus and clarity of this attention has never been stronger than in the years since the publication of the previous version of this chapter (Rubin, Bukowski, et al., 2006). During this period there has been a dramatic increase in research on popularity per se, enough to warrant the publication of a breakthrough book on the topic

(Cillessen et al., 2011). An important change that stimulated increased interest in popularity was largely conceptual. Certainly, popularity was hardly a new word for peer relationships researchers; however, the meaning ascribed to it has changed. Today, popularity refers to, and is assessed by, the extent to which a child is *perceived* to have a position of status within the group—a significant departure from earlier research in which popularity was defined by how much an individual was liked *and* disliked by peers as well as by the notoriety (“impact”) the individual has within the given group. In the next section, we review the correlates and consequences of *perceived* popularity.

### Who Is Perceived to Be Popular?

The apparently simple question of “who is popular?” can be rephrased to pose the question of what characteristics are ascribed to popular children by their peers. Thus, the concept under study is thoroughly perceptual in nature and the method by which it is assessed elicits children's viewpoints of what features characterize children who are viewed as popular in the peer group.

Over a decade ago, in a popular press book for parents, Rubin (2002) suggested that peers viewed two “types” of children and young adolescents as popular—those who are “decent” (kind, altruistic, trustworthy) and those who are “dominant” (arrogant, assertive, aggressive, mean-spirited). His suggestions were drawn from the research of Rodkin, Farmer, Pearl, and Van Acker (2000), as well as from (at the time), popular books and movies about “popular” groups of adolescents (e.g., “Queen Bees and Wannabees,” and *Heathers*). Rubin's challenge was whether parents should have a personal goal of socializing their children to be “popular” while at the same time wanting them to be individuals considered by others as trustworthy, helpful, fun-to-be-with best friends. Although researchers have not examined the stability and dyadic quality of the best friendships of children and adolescents perceived to be popular, there have been many studies suggesting that “popular as decent” and “popular as dominant” are empirically substantiated categories. For example, Rodkin et al. (2006) have identified two groups of children who are perceived by peers to be popular: “model” and “tough” children. “Model” children are perceived as being “cool” and at the same time are academically competent, physically skilled, sociable, and not rated as aggressive by teachers. “Tough” children are also perceived as “cool” but are highly aggressive and physically competent.

Generally, perceived popularity has been linked to a varied list of behaviors and characteristics. For example,

perceived popularity has been associated with both physical and relational aggression (Rose et al., 2004), as well as prosocial behavior (Cillessen & Mayeux, 2004). Perceived popularity has also been associated with having a good sense of humor, academic competence, athletic ability, being attractive, and being stylish and wealthy (Vaillancourt & Hymel, 2006). In a sample of young adolescents, Closson (2008) reported that for boys more than girls, perceived popularity was associated with being cool, athletic, entertaining, and risk taking; for girls more than boys, perceived popularity was associated with being fashionable, attractive, and sociable, and mean, snobby, and rude.

Researchers have suggested that relational aggression may be more central than physical or overt aggression to the establishment and maintenance of perceived popularity. In a longitudinal investigation, Cillessen and Mayeux (2004) found that children who are perceived as popular subsequently increase their use of relational aggression. They hypothesized that relational aggression may serve as a means to maintain social prominence during adolescence, especially so for girls. Furthermore, Rose, Swenson, and Waller (2004) found that the association between overt aggression and perceived popularity was fully explained through the association of both constructs with relational aggression.

It has been reported that the behavioral correlates of perceived popularity vary as children transition from elementary to middle school. Cillessen and Mayeux (2004), for example, found that aggressive behaviors become more strongly associated with perceived popularity after the middle school transition. Given that perceived popularity is relatively stable during late childhood and early adolescence, even across school transitions (e.g., Sandstrom & Cillessen, 2006), these combined findings suggest that changes (or the lack thereof) in the extent to which adolescents engage in positive and negative behaviors across the middle school transition might help to explain stability in high perceived popularity status.

Among the notable changes that occur as young adolescents move from elementary to middle school is the increasing acceptance of antisocial behavior. Adolescents' self-reported negative attitudes towards bullying decrease after the transition (Pellegrini & Long, 2002), and aggression becomes increasingly associated with social prominence (Bukowski et al., 2000). A related change is that the association between aggressive behavior and perceived popularity becomes particularly strong after the middle school transition (e.g., Cillessen & Mayeux, 2004; Rose et al., 2004). Additionally, there is a considerable

increase in substance use during middle school (Oetting & Beauvais, 1990) and perceived popular adolescents, in particular, are likely to increase their alcohol and drug use (e.g., Mayeux, Sandstrom, & Cillessen, 2008). Lastly, all adolescents face the challenge of reestablishing their group memberships and reputations after the transition, given that the move to middle school is accompanied by the introduction of many unfamiliar peers (Brown, McNeil, & Glenberg, 2009).

In a study designed to examine why it is that some youth maintain their perceived popularity status whilst others lose status and yet others gain stature among peers, Bowker, Rubin et al. (2010), followed a group of individuals as they made the transition from elementary to middle school. Peer-perceived increases in both aggressive and arrogant/conceited behavior together predicted both stability and increases in perceived popularity. This finding was consistent with evidence that aggression and arrogance are independently associated with perceived popularity during early adolescence (e.g., de Bruyn & Cillessen, 2006), and with suggestions that aggressive and other antisocial behaviors may reflect attempts to reestablish and gain new status in a new peer context (e.g., Cillessen & Mayeux, 2007).

Four important points can be derived from these findings. The first is that they situate popularity within a large set of variables related to a child's visible notoriety within the group. Second, among older children and young adolescents, aggression, especially, relational aggression, is seen a correlate of popularity, presumably as a means by which a position of status in the group is acquired and maintained. Third, popularity has been observed to be positively correlated with measures that are negatively related to each other. For example, it is positively correlated with both prosocial and aggressive behavior. The dual valence on the correlates of popularity is consistent with Hawley's (2003) bistrategic model of social competence that integrates motives to help and to control. Wargo Aikins and Litwack (2012) have argued that the capacity to skillfully combine these typically incompatible styles basically defines the competence of popular children. Fourth, although the overall construction of perceived popularity was quite consistent across samples, differences have been observed between boys and girls, with girls appearing to see perceived popularity more negatively than boys.

### ***How Do Popular Children Function Within the Peer Group?***

Whereas the studies discussed thus far have used empirical approaches to address the questions of "what is popularity"

and “who is popular,” other researchers have taken a more interpretive approach. At least two well-reasoned analyses of the features associated with popularity have suggested that the phenomenon is best understood as a form of social dominance and power (Pellegrini, Roseth, Van Ryzin, & Solberg, 2011; Sandstrom, 2011). As a result, Pellegrini et al. (2011) argue that the aggressive tendencies linked to popularity, especially the tendencies to act in a relationally aggressive manner, are a natural part of group processes by which some individuals strive to manage or control the activities of the group. Ironically, the putative purpose of their aggressive behavior is to achieve status within the group so as to establish within-group harmony and cohesion. Thus, Pellegrini et al. (2011) interpret popularity as an important means of stabilizing group dynamics. A little aggression on the part of the popular individual minimizes the likelihood that more serious aggression will emerge to upset or destroy the group.

Sandstrom (2011) focused on the role of popularity in the process of social influence. Implicit to Sandstrom’s interpretive approach is the claim that the prestige, status, and visibility that are part of the popularity rubric allow youth to control the social agenda (i.e., group norms) and to have influence over some of their peers. Sandstrom is careful to note that although one can demonstrate the influence that popular children can have over their peers, the processes that account for these effects and the contextual factors that moderate them are not well understood.

The intersection between popularity and power can be seen from another vantage point—the allure that being perceived as popular has for some children. In parallel to the recognition that some children are more concerned than are others with dominance within the peer group (Pellegrini et al., 2011), there is evidence that across the childhood and adolescent years some individuals are highly concerned with achieving and maintaining a position of status within the group. The desire for popularity has been observed to be strongest between the ages of 12 and 16 years and has been observed to be associated with the behaviors (e.g., aggression) that are critical for acquiring and maintaining status within the group (LaFontana & Cillessen, 2010).

#### ***How Is Perceived Popularity Related to Adjustment?***

Research on the effects of being popular has typically focused on changes in aggression that can be attributed to prior levels of popularity. Two studies in particular have shown that measures of status predict subsequent levels of aggression even after accounting for the original level of aggression (Cillessen & Mayeux, 2004; Rose et al., 2004).

Using similar 6-month longitudinal designs, Cillessen and Mayeux showed that a measure of perceived popularity predicted subsequent measures of physical and relational aggression for girls and boys whereas Rose et al. found this effect for young adolescent girls and boys using a measure of relational aggression. One can interpret these findings as evidence that the experience of power that is inherent in status has the insidious effect of allowing high-status persons to function outside of usual social norms such as the sanctions against aggressive behavior.

To our knowledge there have been no studies of the effect of status in the peer group on self-perceptions. It is reasonable to expect that the experience of power and dominance that derive from a position of status within the peer group will affect one’s sense of personal efficacy and influence. Whereas acceptance may promote a child’s affective sense of well-being and validation, popularity may affect one’s sense of power.

#### ***How Does Perceived Popularity Intersect With Other Aspects of Group Functioning?***

Two final issues regarding perceived popularity deserve some consideration. Both are related to the broad question that started this section of the chapter—specifically the question of what popularity is and how it fits together with other constructs. First, perhaps the most pervasive conclusion that can be drawn from the current literature is that popularity is firmly situated within the broader construct of status. Just as importantly, it is clear that popularity is intricately linked to a broad set of measures that are related to either prominence or notoriety in the peer group or issues of social dominance. This evidence of the complex set of measures with which popularity is associated has both conceptual and methodological repercussions. Conceptually, this vast set of associations with other measures raises the question of whether popularity should be studied on its own as a distinct form of status or whether it should be bundled with other aspects of status for purposes of theory development or for the creation of omnibus measures. Of course the methodological challenge of these associations is the interpretive issue that may be raised when one observes an association with a measure of popularity. Unless one has controlled for the many measures associated with popularity, an unequivocal interpretation of these associations will be, at best, difficult.

A second question concerns the extent to which popularity derives from natural or cultural forces. Researchers need to consider whether popularity is part of human nature, rooted in our atavistic past, with an ethological significance



that derives from its importance for the emergence of new leaders during adolescence, to promote the well-being and effective functioning of human groups, or whether it is a meme-like social construct that has worked its way into the culture of adolescent groups (at least in Western societies) and is handed down from one generation of adolescents to the next. Studies of cultural variations in the meaning and significance of popularity are needed to identify how youth from different countries and cultures define popularity and to explain why these differences may occur.

### **INTRAPERSONAL THOUGHTS AND FEELINGS ABOUT PEER PROCESSES**

Researchers have long posited that the children's standing in the peer group results, in part, from the ways in which they behave in various social situations. A related assumption has been that a child's thoughts about others, about the self, and about the larger social milieu account, in part, for why children behave as they do (Rubin & Rose-Krasnor, 1992). Thus, an indirect relation is hypothesized to exist between thinking about things social and peer reputation and status. In the following section, we review evidence for this relation.

#### **Social Information Processing (SIP)**

In this section, we review research in which the processing of social information has been associated with qualitative aspects of children's interactions and relationships with peers. The majority of this research has been guided by social information-processing (SIP) models, such as those of Rubin and Krasnor (1986), Crick and Dodge (1994), and Lemerise and Arsenio (2000) in which it has been argued that the ways in which children attempt to make sense of their social experiences with peers serves to determine, in part, the ways in which they interact with their peers and establish and/or maintain their relationships with them. Indeed, these models are part and parcel of transactional models suggesting that the relations between children's social cognitions, social behaviors/interactions, and reputations "snowball" in meaningful ways such that over time, these individual (social cognitions), interactional (social behaviors), and relationship (rejection/popularity; exclusion; victimization) become increasingly entrenched in the peer group.

Much research on social cognition and peer relationships has focused on aggressive children's deficits or

qualitative differences in performance at various stages of these SIP models. For instance, when considering the motives or intentions of others, aggressive children, especially those who are also rejected, are more disposed than their popular counterparts to assume that negative events are the product of malicious, malevolent intent on the part of others (e.g., Dodge et al., 2003). This bias is evident when children are asked to make attributions for others' behaviors in situations where something negative has happened but the motives of the instigator are unclear. In these ambiguous situations, rejected-aggressive children appear unwilling to give a provocateur the benefit of the doubt (e.g., by assuming that the behavior occurred by accident. This "intention cue bias" is often used as an explanation for aggressive and oppositional-defiant children efforts to solve their interpersonal problems in hostile ways.

But why would aggressive children think that when negative but ambiguously caused events befall them, the protagonist means them harm? In keeping with Lemerise and Arsenio (2000), a transactional perspective would suggest that aggressive children, many of whom are already rejected (and victimized) by their peers, believe that certain others do not like them, those others have a history of rejecting of them or acting mean toward them, and thus the negative act must be intentionally caused. This conclusion of intentional malevolence is posited to elicit anger and a rapid-fire response of reactive aggression. Many researchers have found that when asked how they would react to an ambiguously caused negative event, aggressive children appear to be hypersensitive and overly responsive to ambiguous social cues (Horsley, de Castro, & Van der Schoot, 2010), respond emotionally with dysregulated anger (e.g., de Castro, Verhulp, & Runions, 2012), and eventually with a choice and display of agonistic strategies (Dodge et al., 2003). And aggressive children also regard aggression to be an effective and appropriate means to meet their interactive goals (Vernberg, Jacobs, & Hershberger, 1999). The processes leading to the enactment of aggression may reinforce an already negative peer profile.

By the elementary and middle school years, many anxiously withdrawn children are also rejected and excluded by their peers (Rubin, Coplan, et al., 2009). Thus, it may not be too surprising that these children view their social worlds in ways that vary from those of nonwithdrawn and/or nonrejected and nonexcluded children. In early childhood, socially withdrawn children are less able than their non-withdrawn age-mates to understand the perspectives of others; also when socially withdrawn 4- and

5-year-olds are asked how they would go about obtaining an attractive object from another child, they produce fewer alternative solutions, display more rigidity in generating alternative responses, and are more likely to suggest adult intervention to aid in the solution of hypothetical social problems when compared to their more sociable age-mates (see Rubin, Coplan, et al., 2009, for a review).

Rubin and colleagues (Rubin, Coplan, et al., 2009) have argued that as a result of frequent interpersonal rejection by peers, anxiously withdrawn children may begin to attribute their social failures to internal causes. Consistent with Rubin and Krasnor's (1986) earlier report that extremely withdrawn children tended to blame social failure on personal, dispositional characteristics rather than on external events or circumstances, Wichmann, Coplan, and Daniels (2004) reported that when 9- to 13-year-old withdrawn children were presented with hypothetical social situations in which ambiguously caused negative events happened to them, they attributed the events to internal and stable "self-defeating" causes. Moreover, withdrawn children suggested that when faced with such negative situations, they were more familiar with failure experiences and that a preferred strategy would be to withdraw and escape.

Given the earlier noted conceptual associations between social withdrawal, victimization, and peer rejection, the findings by Wichmann et al. (2004) are reminiscent of work by Graham and Juvonen (2001). These latter researchers reported that youngsters who identified themselves as victimized by peers tended to blame themselves for their peer relationship problems. And Nolen-Hoeksema, Girgus, and Seligman (1992) have argued that self-blame can lead to a variety of negative outcomes of an internalizing nature, such as depression, low self-esteem, and withdrawal, thereby suggesting a self-reinforcing cycle of negative socioemotional functioning.

More recently, Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-LaForce (2006) reported that aggressive fifth and sixth graders were more likely than their anxiously withdrawn and nonaggressive, nonwithdrawn (typical) counterparts to assign external blame in situations involving ambiguously caused negative events. However, like aggressive children, anxiously withdrawn children were more likely than typical children to indicate that they would feel angry if such events occurred. Anxiously withdrawn children were also more likely than typical children to suggest that they would cope with adversity by avoiding the provocateur.

In the same study, Burgess et al. (2006) found that whereas aggressive and withdrawn children exhibited

more maladaptive processing skills (e.g., external blame, anger, avoidant coping) than typical children in provocative situations involving unspecified peers, they demonstrated more adaptive processing (e.g., prosocial attributions, neutral emotions) if the provocative situations involved their best friends. These findings are particularly illuminating in that they question the suggestion that aggressive (and withdrawn) elementary school-age children have deficits in their abilities to process social information; it may well be that a key difficulty is performance- rather than competence-related and that the performance difficulty derives from an inability to regulate anger when negative events are experienced and viewed as caused intentionally. Also, within the friendship context, aggressive and anxiously withdrawn children are likely to have fewer experiences of being rejected, victimized, and otherwise intentionally hurt, which may explain why these children are able to process information in much the same way as typical children when the provocateur is a friend. In summary, these findings, as well as those by others (e.g., Peets, Hodges, & Salmivalli, 2008) strongly suggest that children's SIP differs across relationship contexts or according to the person about whom they are thinking, likely due to relationship-specific schema, expectations, memories, and affect that impact each step in the SIP model.

The relationship-specific ways in which children interpret and process social information are also noteworthy in light of recent evidence that friendship-specific SIP is related to actual friendship adjustment outcomes. For example, Rose and Asher (2004) found that the ways in which young adolescents interpret hypothetical help-giving and help-seeking friendship tasks relate significantly with the number and quality of their mutual friendships. Strategies such as avoidance and exclusion were found to be negative predictors of having friends and positive friendship quality. Rose et al. (2012) have also revealed significant linkages between children's and adolescents' outcome expectations about disclosing problems to friends and the extent to which they actually report disclosing to friends. And, Spencer et al. (2013) recently found homophily between young adolescents and their mutual friends in certain types of SIP; more importantly, the extent to which young adolescents and their friends were similar in aggression-related SIP was found to explain significant variability in the quality of their friendships. Thus, although SIP theory and research is typically concerned with explaining variability in behavioral outcomes such as aggression and withdrawal that are directed to peers in general, SIP models also appear to offer some

explanation about variability in behaviors directed at friends. In addition, they appear to provide some important clues about why some friendships during childhood and adolescence are more positive than others.

### Rejection Sensitivity (RS)

Also of relevance to understanding how social cognitions are related to peer interactions and relationships is the construct of *rejection sensitivity* (RS)—the tendency to defensively expect, readily perceive, and overreact to rejection (Downey, Lebolt, Rincon, & Freitas, 1998). Drawing from both attachment and SIP theories, the empirically-supported RS model states that experiences with rejection, from parents and/or peers, may sensitize children and adolescents to readily expect and perceive rejection in situations wherein rejection is possible (e.g., London, Downey, Bonica, & Paltin, 2007). Ironically, RS can lead to a self-fulfilling prophecy in which individuals' expectations of rejection lead them to engage in defensive actions (e.g., aggressing against or withdrawing from others; Downey et al., 1998), which in turn increases the likelihood of actual rejection.

Rejection sensitivity is typically assessed by presenting children with hypothetical scenarios and asking them how nervous or angry they would feel and how much they expect to be rejected in each situation. Downey et al. (1998) have hypothesized that expectations of rejection that are accompanied by anger may lead to aggressive behavior with peers and that (nervous or) anxious expectations of rejection may lead to internalizing or anxious behaviors with peers. In support of this hypothesis, Downey et al. (1998) found that angry expectations of rejection were positively associated with teacher-rated aggression and negatively linked with social competence. Furthermore, child and adolescent anxious expectations have been linked with social anxiety and social withdrawal (London et al., 2007). In general, RS has been linked both contemporaneously and longitudinally with psychosocial problems such as rejection, depression, and loneliness across development (e.g., McDonald, Bowker, Rubin, & Laursen, 2010). Longitudinal evidence also suggests that peer rejection predicts increases in rejection sensitivity over time (Wang, McDonald, Rubin, & Laursen, 2012). And recently, McDonald et al. (2010) revealed that anxious RS was uniquely associated with social anxiety and depressive symptoms whereas angry RS was not. These researchers also demonstrated that anxious RS was associated with depression, but only for

those adolescents with unsupportive friendships. Relatedly, Bowker et al. (2011) found that the associations between anxious RS and indices of social anxiety were strongest for young adolescents without mutual best friends and for those whose best friend was highly rejection-sensitive. Thus, it seems that anxiety-provoking expectations about rejection may not be linked with psychological distress for young adolescents who have supportive best friendships with nonrejection sensitive peers. Given that these latter studies were contemporaneous in nature, future longitudinal work on the buffering effects of best friendships is clearly warranted.

### Self-System Correlates of Peer Acceptance and Rejection

An important repercussion that has been ascribed to negative experiences with peers is their effect on the self-concept. For example, it has been reported that rejected-aggressive children overestimate their social skills and standing in the peer group relative to their non-rejected-aggressive age-mates (e.g., de Castro, Brendgen, Van Boxtel, Vitaro, & Schaevers, 2007). It has also been consistently reported that the combination of anxious withdrawal and peer rejection and/or exclusion fosters negative self-appraisals and negative self-esteem and to reinforce socially anxiety, social disengagement, and withdrawn behavior (e.g., Salmivalli, Ojanen, Haanpää, & Peets, 2005).

A further distinction between rejected children is the chronicity of their peer problems. Whereas rejection is temporary for some children, it is an enduring experience for others. Ladd and Troop-Gordon (2003) showed that chronic rejection was related to subsequent views of the self and that these negative self-perceptions partially mediated the relation between peer difficulties and internalizing problems and loneliness. Researchers have also reported that negative self-perceptions are associated with such peer difficulties as victimization (Salmivalli et al., 2005). In keeping with transactional models of the relations between peer interactions, relationships, and self-processes (e.g., Rubin, Coplan, et al., 2009), Salmivalli and Isaacs (2005) found that negative self-perceptions placed children at risk for victimization, rejection, and friendlessness. All in all, children who experience peer rejection, exclusion, and victimization, especially those who are characteristically anxious, withdrawn, and submissive, are at risk for the development of negative self-perceptions of their social skills and relationships.

## THE PEER GROUP AS A SOCIAL CONTEXT

In this section, we explore the structural and functional characteristics of the peer group within which friendships and social reputations exist. We also describe processes involved in group formation, and group norms and organization. Our discussion is focused on informal peer groups that are initiated and overseen by their participants; we will not discuss formal peer groups, which are usually under the supervision and direction of an adult.

### Peer Group Functions

From participating in peer groups, children are able to develop and fine-tune skills that are necessary for the maintenance of efficient group functioning. Group participation allows children to learn (a) how to engage in cooperative activity aimed at collective rather than individual goals; (b) about social structures within and across groups; (c) the skills associated with leading and following others; (d) to control hostile impulses towards in-group and out-group peers; and (e) to mobilize aggression in the service of group loyalty by directing it towards “outsiders.” Moreover, the peer group provides a social context within which close dyadic relationships may be developed. Another function of the peer group is to reinforce identity development. The association with peers who have similar views and normative beliefs allows children to develop a sense of identity within the broader peer group.

Lastly, it has been argued that peer group experiences may have a significant effect on the social, emotional, and behavioral functioning and adjustment of individuals within larger social settings. For example, the profile of peer networks significantly predicts changes in individual members’ academic motivation (Kindermann & Gest, 2009). Similar findings have been reported concerning the contributions of peer groups to such matters as school dropout, teenage pregnancy, and delinquency (see Brown & Dietz, 2009, for a review).

### A Developmental Perspective

As early as the preschool years, dominance hierarchies and affiliative networks exist (Santos et al., 2008). Many researchers have found that the social dominance hierarchy is an important organizational feature of the preschool peer group (e.g., Vaughn, Vollenweider, Bost, Azria-Evans, & Snider, 2003). And, researchers have argued that

dominance hierarchies develop naturally in groups to serve adaptive functions. In the case of preschool-aged children, dominance hierarchies appear to reduce overt aggression among members of the group. Observations of exchanges between children in which physical attacks, threats, and object conflicts occur reveal a consistent pattern of winners and losers. And children who are losers in object struggles rarely initiate conflict with those who have proven “victorious” over others or who have been victorious over them (Strayer & Strayer, 1976).

During the upper elementary school and middle school years, the structure of the peer group changes from a relatively unified whole to a more differentiated structure. In this new structure, children organize themselves into social groups, clusters, networks, or cliques. Peer networks and cliques are voluntary, friendship-based groups, and stand in contrast to the activity or work groups to which children can be assigned by circumstance or by adults. Cliques generally include three to nine same-sex children. By 11 years of age, most of children’s peer interaction takes place in the context of the clique, and nearly all children report being a member of one (for a review see Brown & Dietz, 2009).

Peer networks, whether identified observationally or via peer reports (see Kindermann & Gest, 2009, for a review), or whether identified in or out of school (Kiesner et al., 2003), are typically organized to maximize within-group homogeneity (Rodkin et al., 2000). Thus, in recent studies of preadolescents conducted in both Western (e.g., Canada, Finland, United States) and Eastern (e.g., China) cultures, group membership has been found to comprise children similar with regard to the following characteristics: aggression (e.g., Xie et al., 1999), bullying (e.g., Espelage et al., 2003), and school motivation and performance (e.g., Kindermann, 1993).

As in middle childhood, cliques are readily observed in adolescence, and group membership comprises individuals who are similar with regard to school achievement (Kindermann, 1993), substance use (cigarettes and alcohol; Urberg, Degirmencioglu, & Pilgrim, 1997), and delinquency (Kiesner et al., 2003). Whereas cliques represent small groups of individuals linked by friendship selections, the concept of peer subcultures, or “crowds” (Brown & Dietz, 2009), is a more encompassing organizational framework for segmenting adolescent peer social life. A crowd is a reputation-based collective of similarly stereotyped individuals who share the same image or status among peers, even if, in fact, they actually spend little time interacting with each other. Thus, crowd affiliation is



assigned through the consensus of the peer group and is not selected by the adolescents themselves.

Different behaviors may define membership and different consequences of membership may occur. For example, “jocks” are involved in athletics and tend to be popular as well as physically and romantically attractive; “brains” worry about their grades and have marginal standing with peers; and “druggies/burnouts” do poorly in school, are less socially competent, are hostile toward authority figures, and engage in risky health behaviors (e.g., La Greca, Prinstein, & Fetter, 2001). However, these outcomes may not generalize across school contexts due to the values of the school at large. For example, in a school within which academic proclivity is highly valued, “brains” may be members of the popular crowd; in schools wherein academics are not equally stressed by the student body, “brains” may be outsiders (Sussman et al., 2007).

Crowd membership is an especially salient feature of adolescent social life and adolescents’ perceptions of crowds change in important ways with age. For example, between the ages of 13 and 16 years, adolescents alter the ways that they identify and describe the crowds in their school (O’Brien & Bierman, 1988). Whereas young adolescents focus on the specific behavioral proclivities of group members, older adolescents center on members’ dispositional characteristics and values. This observation reflects broader changes that characterize developmental shifts in person-perception between the childhood and adolescent years.

The stigma that is placed on members of a particular crowd channels adolescents into relationships and dating patterns with those sharing a similar crowd label. This may prevent adolescents from the exploration of new identities and discourage shifts to other crowd memberships. There is recent evidence that the stigma associated with some large peer groups or crowds influences the judgments that adolescents form about their peers (Horn, 2003). In particular, Horn found that adolescents are biased in their use of reputational or stereotypical information about particular groups, particularly when presented with ambiguous situations. It is likely that these crowd-specific evaluations help to perpetuate group stereotypes and the structure of peer groups in a school.

Despite the differences that exist in the structures of peer groups, all of them inevitably disintegrate by late adolescence. This is largely due to the integration of the sexes that accompanies this period. To begin with, mixed-sex cliques emerge. By the mid high school years, mixed sex cliques become commonplace. Both girls and boys feel sufficiently

confident to approach one another directly without the support of clique membership. Another contributing factor to the decline in the importance of cliques and crowds results from adolescents developing their *own* personal beliefs and norms. In this regard, adolescents no longer see it necessary to identify themselves as members of particular social groups, whether they are cliques or crowds.

### Groups and Adaptation

As previously noted, group affiliation may be associated with adaptive and maladaptive development. For example, researchers have found a negative relation between peer group membership and externalizing/internalizing problems (Newman, Lohman, & Newman, 2007). Likewise, Prinstein and La Greca (2004) argued that being a member of a given peer group strongly enhances self-concept and may protect against the development of internalizing problems. Significantly, membership in stigmatized peer groups may be associated with maladjustment. In a longitudinal follow-back study, Prinstein and La Greca found that “populars/jocks” saw a decrease in internalizing problems over time whereas “brains” saw an increase in internalizing problems over time.

### Summary

In summary, peer groups provide children a unique social context in which they are able to learn about themselves, others, and relationships between people and groups. Children’s initial dyadic experiences with friends allow them to acquire the necessary skills for competent social interaction and peer acceptance. When children become members of social groups, and become accepted by group members, they may become active participants in cliques. At the same time, some adolescents become members of crowds. Cliques and crowds provide different social opportunities for adolescents. The former provides a context for adolescents to test and develop values and roles in the absence of adult monitoring; the latter offer extrafamilial support in the development of a sense of self.

### CONCLUSIONS AND FUTURE DIRECTIONS

In this chapter we have reviewed current theory and research on peer interactions, relationships, and groups. Our primary goal was to make the complicated business of peer relations more comprehensible. To meet this goal,

we introduced a conceptual model that has guided, and can continue to guide, research on transactional relations between children's individual characteristics (e.g., temperament, sex), the complex ways in which they interact with peers, the relationships that are formed as a function of repeated interactions and experiences with others, and the groups within which "all of the above" may take place. Also, we probed the meanings, measurement, and significance of these levels of social complexity; in so doing, we reviewed recent research on the correlates and consequences of friendship, peer acceptance, popularity, exclusion, victimization, rejection, and peer group involvement. Significantly, we have argued that impoverished peer relationships, specifically rejection, victimization, and exclusion, represent risk factors for all manner of negative consequences. We noted, however, that friendship quality and being friends with socially and emotionally competent others can serve as protective factors (as can the display of positive, prosocial behaviors).

One consequence of reviewing the literature on peer relations is that gaps in our understanding of the peer system have become increasingly clear. Thus, in this final section we look to the future by discussing several research directions that are likely to lead to new knowledge about children's and adolescents' peer experiences, which in turn, we hope will improve ways and means to help children whose behavior and relationships in their worlds of peers may be moving them onto negative developmental pathways.

## Culture

As noted previously, growing evidence indicates that peer experiences influence (and are influenced by) the cultural context (see Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume). Whether it be the prevalence of a given behavior (e.g., anxious withdrawal or aggression) or the "meaning" of a behavior and its associated peer outcomes (e.g., peer acceptance, rejection, or victimization), recent research has pointed to notable differences in Western (e.g., United States, Canada) and non-Western societies (see Chen & Rubin, 2011, for relevant reviews).

Cross-cultural research on peer experiences, however, is still in its infancy. Additional studies are needed, especially in non-Western, "majority world" countries that have been heretofore ignored. Indeed, the consideration of children's and adolescents' peer interactions, relationships, and groups in understudied countries in Africa, Oceania, Latin America and elsewhere could reveal novel information about the ways in which culture may shape peer

experiences and their impact on development as well as new knowledge about cultural differences *among* "majority world" societies and how they affect the experiences that children have with their peers.

We would also suggest that researchers remove themselves somewhat from their relative security within the cultural constructs of collectivism and individualism. In almost all cultural and cross-cultural research on child and adolescent peer interactions and relationships, the conceptual basis is housed in these two aforementioned constructs. And yet, interactions and relationships within varying cultural communities are differentiated also along such continua as *power distance*, and *uncertainty avoidance* (e.g., Hofstede, 1980). For example, it has been suggested that societies may be categorized by how much power specific individuals have within the larger community. It may be that some cultures value social interactions and relationships that are more egalitarian, whereas others may value a hierarchical relationship structure. One may ask whether friendship or peer group structures, when explored through the lens of culture, may reflect greater-or-lesser propensities in the directions of dominance/submissiveness and egalitarianism (Rubin et al., 2008).

*Uncertainty avoidance* involves the extent to which cultures feel comfortable in unstructured situations (Hofstede, 1980). According to Hofstede, uncertainty-avoiding cultures try to minimize the possibility of such situations by adhering to strict laws and rules, and on the philosophical and religious level by a belief in *absolute truth*. Consequently, one may expect that rules and regulations pertaining to interactions, relationships, and groups are clearly demarked through socialization practices. In such cultures, the friendships or peer groups within which children may be engaged are selected by parents, not children. And the choice of friendships and groups may be marked by perceived similarities in familial/cultural beliefs and traditions. These notions may be particularly valid for immigrant families (and especially parents) that aspire to cultural (and ethnic, religious) connectedness for their children. In cultures that are more accepting of uncertainty, there may be greater tolerance for philosophical and religious diversity. In this regard, there may be greater degrees of freedom accorded to both the nature of the friendship and the peer group, who is considered an allowable friend or group member (by parents and family), and how autonomous/independent the friendships and groups (and the individuals) can be. Many of these notions have yet to be examined.

Significantly, in keeping with the above suggestions, research on cultural effects would benefit from stronger

assessments of concepts that supposedly distinguish between cultures. Between *country* comparisons can provide interesting findings, but in the absence of direct measures of such cultural dimensions as collectivism, individualism, power distance, and uncertainty avoidance a cultural interpretation of these between-country findings is limited to speculation based on essentialist assumptions about what particular places are like. Without being able to directly attribute contextual effects to specific aspects of culture, we may learn how places differ without a satisfying understanding of why these differences occur.

In summary, peer researchers would do well to focus on culture, ethnicity, and race, both within and across countries and communities. For example, an entire program of research could be developed around some of the following questions (that could be asked during individual interviews with children and adolescents of different ages and within different cultural communities): What *is* a friend and a friendship? What is it that defines a *good* friendship? How does one *become* a friend? How does one *end* a friendship? Thereafter, one could begin to observe the *whos*, *hows*, and *whats* of friendship, much of which we described herein for predominately Western samples of children and adolescents.

### Context

It has also become increasingly clear that other aspects of context help to explain variability in children's peer experiences, such as neighborhood (e.g., Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume), and school and classroom contexts (e.g., Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). For example, it is well established that the associations between aggression and peer rejection and acceptance depend on the prevalence of aggression in the classroom as well as the class norms about aggression (e.g., Stormshak et al., 1999). Ecological/social-contextual theories suggest that an individual's adjustment is determined by *multiple* features in the larger environment, and by subsequent adaptation to these features (Bronfenbrenner & Morris, 2006). Thus, it appears important for researchers to consider multiple contextual factors to best understand the ways in which context determines and regulates children's peer experiences.

### Studying Different Populations of Children and Their Peer Experiences

Research on peer relations is multidisciplinary. And yet, most studies of peer experiences focus either on typical,

community samples of children and adolescents or on similar social-cognitive, cognitive, academic, and psychological indices of adjustment, such as aggressive-related social information processing, grade point average, anxiety, loneliness, and depression. Additional research efforts that are truly multidisciplinary should help to reveal new knowledge about factors that predict the quality of peer experiences or how peer experiences may predict domains of functioning that have been relatively ignored.

### Health Symptoms

One area of research that has emerged in the past decade has been how peer experiences influence and are influenced by physical health symptoms and ailments, such as somatic complaints, obesity, chronic medical conditions, and neurologically based disorders (e.g., Swearer, Wang, Maag, Siebeker, & Frerichs, 2012; van Roekel, Scholte, & Didden, 2010). Indeed, it has become increasingly clear that stressful peer experiences, such as being victimized and harassed by peers, can lead to negative physical health *symptoms* (e.g., abdominal pain, headaches, bedwetting, feelings of fatigue; Nishina, Juvonen, & Witkow, 2005). Nishina et al. (2005) found that peer victimization among sixth-grade students predicted later psychosocial and physical health difficulties, which in turn, predicted academic difficulties—findings that clearly demonstrate the importance of considering physical health outcomes in studies of peer relations. To our knowledge, research on peers and physical health symptoms has been limited to *peer victimization*; it seems important to determine whether other peer experiences, at both the dyadic (e.g., friendlessness) and group levels of social complexity (e.g., exclusion), might also explain variability in children's physical health symptoms and associated outcomes. From an intervention perspective, it might also be worthwhile to consider protective factors in this area of research.

Another example may be taken from studies of obesity. Recent evidence suggests that overweight and obese children and adolescents are often rejected, victimized, and excluded by peers, likely due to societal stigma as well as the limited physical activity skills that are often associated with obesity (e.g., Zeller, Reiter-Purtill, & Ramey, 2008). Interestingly, however, support for a transactional model of influence has also been revealed: Children who are rejected and victimized by peers often avoid opportunities for physical activity and exercise (Storch et al., 2007); the lack of physical activity is one of the “Big Two” contributors to the obesity epidemic. However, programming in schools (inclusive versus segregated settings) and teachers can

influence the extent to which children and adolescents who are obese or suffering from a physical disability or ailment are included by, and have positive relations with their peers during the school day (e.g., Kwon, Elicker, & Kontos, 2011), suggesting that future research on physical health and peers should also consider school features to best aid in the design of intervention and prevention efforts.

### ***Peer Relations and Neuroscience***

As we noted in our discussion of individual characteristics that may influence children's peer experiences, researchers have recently begun to examine the neural correlates of such peer experiences as rejection and exclusion (e.g., Adams et al., 2011; Guyer et al., 2012; Peters et al., 2011). Others have examined the social interactions and peer relationships of children who have suffered mild to severe traumatic brain injury (TBI; e.g., Yeates et al., 2013). Indeed, Yeates et al. (2007) have proposed an integrative model of social outcomes of children with TBI in which social adjustment is not only moderated by injury related and environmental factors, but also may be mediated or bidirectionally related to social cognitive, and SIP factors. As noted above, these factors can predict various forms of social interaction, which in turn, may help to determine the quality of relationships that TBI children form in the peer group and with friends. Again, these individual, interaction, and relationship factors are likely to affect the TBI child's social and emotional adjustment. In recent studies, Yeates et al. have found that TBI children (a) demonstrate deficits in social cognitive processing (e.g., theory of mind, Dennis et al., 2012); (b) without a mutual friendship were rated by classroom peers as less prosocial and sociable and more rejected and victimized than those with a best friendship (Yeates et al., 2013); (c) whose injuries were the most severe performed most poorly on social cognitive tasks (Dennis et al., 2012) and least likely to have a best friend (Yeates et al., 2013); and (d) with poor peer relationships had focal volumetric reductions in white matter within regions of the brain involved in SIP (Yeates et al., 2013; Bigler et al., 2013). Although these studies shed light on some of the peer relations difficulties of TBI children many questions remain to be answered. For example, virtually nothing is known of the friendships of TBI children and whether high-quality friendships may buffer them from negative social, emotional, and academic outcomes. And certainly, intervention efforts that are focused on the social and emotional difficulties experienced by TBI children have yet to make headway in the empirical literature.

More generally, research on the intersection between peer experiences and neuroscience can and should begin to make reference to, or develop new theoretical underpinnings. These directions could include conceptually derived studies of the link between peer experiences and neural-based reward centers, the effect of peer contact on the entrainment of regulatory mechanisms and the processes underlying stress responsivity, and the association between success with peers and the short- and long-term activation of affect-related areas of neural architecture. It is difficult to overemphasize the importance of using a theory-based approach to this research domain. The absence of clearly articulated theories and hypotheses based on them will result in a disparate collection of facts rather than a clearer understanding of the peer system.

### **The Need for Clearer Articulation of Relevant Concepts and Increased Specificity of Variables and Processes**

A central point of this chapter is that researchers are fortunate to use constructs whose attraction lies in their link to theories that bring together processes at multiple levels of social complexity. It is this intersection between different forms of personal and social experience that makes research on peer relations relevant to so many developmental processes and outcomes. This use of broad, complex constructs, however, presents two risks. The first is the lack of a clear articulation of meanings and processes. Even in cases where there are widely replicated effects (e.g., demonstrations of the effects of friendship on behaviors such as aggression), the identification of the processes that account for these effects have been poorly specified.

A second risk stems from the multidimensional nature of the constructs we study. Again, consider two of our most widely studied constructs, popularity and friendship. Each comprises several more specific components. Friendship is characterized by closeness, security, opportunities for help, and other features. Popularity refers to how much someone is perceived to be well liked, to be well known, and to possess other indices of perceived status within the group. Progress in understanding what truly matters in the peer group and how the functioning of the peer system varies across contexts and cultures will benefit from a more specific assessment of the individual components of the broad constructs at the heart of peer research. This emphasis on specific features and processes will help us understand what really goes on in the groups of hockey players we met at the beginning of this chapter and why such interactions,



relationships, and group experiences matter in the lives of children and adolescents.

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## CHAPTER 6

# Early Childcare and Education

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## OVERVIEW

High levels of maternal employment in the United States and throughout the world have led to substantive changes in the rearing of infants and young children (Waldfogel, 2002). Nonparental care during early childhood has become normative in the United States, Western Europe, and many countries in Asia, Africa, and Latin and South America. Beginning in the child's first year, about 50% of the children in the United States experience regular nonparental childcare and by the preschool years more than 75% of children have experienced some type of childcare (Pianta, Barnett, Burchinal, & Thornburg, 2009).

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This pattern of child rearing diverges from earlier historical periods in which parents (most often, mothers), or siblings, provided most of the direct care for their young children.

The widespread use of childcare for young children raises several important developmental questions. These issues are related to multiple developmental theories, including those that focus on the importance of maternal care for social and emotional development as well as those that focus on educational activities to enhance cognitive and social skills for young children. The wide-scale use of nonparental early care and education (ECE) also challenges some deeply held beliefs and cultural models of child rearing (Brazelton, 1986). Consequently, some findings from research on the effects of ECE on children's development have been controversial (Lamb, 1998; Love et al., 2003).

Historically, the ECE research literature reflects deep concerns about developmental questions. The early literature had two different foci. One set of studies documented

the benefits of intervening with high-quality childcare for children from low-income families, whereas the other set of studies documented the potential harm to infant-mother attachment of nonmaternal care for middle-class families (Lamb, 1998). As described in more detail in this chapter, widespread concern about the lack of attention to important differences in family background in the later set of studies led to further research with improved measurement of family characteristics as well as the quality, quantity, and type of ECE children experienced. Several large- and many smaller-scale studies documented the huge increase in the proportion of young children receiving ECE between 1980 and 2000, which were primarily due to increases in maternal employment, and examined how childcare experiences predicted early development with increasing methodological rigor. More recently, there has been increased focus on identifying ECE practices and programs that are effective in improving children's school readiness skills.

Researchers have not yet agreed on whether childcare is "good" or "bad" for children. This is, in large part, because studies have identified both benefits and risks of ECE for children, depending on the specific question they are asking or population they are studying. For example, high-quality early care and education has moderate to large positive impacts on academic and social development in some studies of low-income children (e.g., Karoly, Kilburn, & Cannon, 2005). Yet, focusing on middle-class children and specifically their behavioral outcomes, other researchers have found detrimental effects of childcare early in life (e.g., Belsky, 2009). Finally, others scholars conclude that both the positive and negative consequences are likely to be negligible because, in observational studies of childcare, associations between ECE quality and quantity and children's outcomes are quite modest (e.g., Burchinal et al., 2009).

Early care and education serves two primary functions: supporting parental employment and promoting positive cognitive and social development, especially for children at risk for poor educational outcomes. Cultural norms that reflect the extent to which caring for young children is viewed as the responsibility of the families or of broader communities influence decisions about parental employment and ECE after the birth of a child (Lamb, 1998). In northern Europe, where ECE is viewed as a community responsibility, parents have access to generous government-subsidized family leave and low-cost, high-quality childcare. In the United States, where childrearing is viewed as primarily the family's responsibility,

parents choose from a range of options available in the private market, after weighing the benefits, costs, and other constraints (Waldfogel, 2002). Although the U.S. government has provided financial support to low-income families to offset the high cost of early care and education, these policy initiatives were designed primarily to incentivize employment by increasing parents' access to childcare and have done little to increase the quality of ECE. As a result, for most families ECE has remained a family responsibility.

Increasing concern that some children, particularly low-income children, arrive at school unprepared to succeed in elementary school, and that these differences in early skills have lasting consequences for later educational achievement, have fueled public support for investing in young children. At the same time, early childhood education has been identified as one of the most effective mechanisms for improving school readiness for all children regardless of ethnicity or social class (Heckman & Masterov, 2007). Experimental and quasi-experimental studies have found that participating in early education programs has positive effects on disadvantaged children's educational and labor market success. As a result, these ECE programs generate benefits not only to participants, but also to the economic and social health of communities (Barnett & Masse, 2007; Heckman & Masterov, 2007; Magnuson, Ruhm, & Waldfogel, 2007; Putman, Frederick, & Snellman, 2012). Such evidence has contributed to an expansion of compensatory preschool services for low-income children funded by federal and state governments (Barnett, Hustedt, Friedman, Stevenson Boyd, & Ainsworth, 2007).

Understanding how ECE affects children across multiple domains of outcomes, and along multiple dimensions of care characteristics, is especially important because it has become part of the typical child's early experiences and because of the need for public money to be spent efficiently. Fortunately, the interdisciplinary nature of ECE scholarship has resulted in a comprehensive and rigorous body of research that includes descriptive population-level studies and experimental evaluations of innovative programs, as well as rigorous evaluations of scaled-up interventions and small-scale laboratory research that advances both research and practice (Pianta et al., 2009). This large literature addresses important questions about policy initiatives, program design, and classroom practices.

This chapter reviews the current landscape of ECE programs in the United States as well as current directions in research and the accumulated findings from more than 50 years of research. We begin this chapter

with a discussion of developmental theories and their focus on how nonparental care for infants, toddlers, and preschoolers affects early development. Then we discuss the key dimensions of ECE—type, quality, and quantity—describing the experiences of children in childcare along those dimensions. Next we present empirical research describing associations between ECE and early development, along with the contextual challenges of addressing confounds between family characteristics and the selection of childcare arrangements. The next section examines whether ECE serves as a risk or protective factor with particular attention to some subgroups of children, especially low-income or ethnically diverse children. The final section describes public policies and programmatic strategies to improve quality and ensure access to ECE, including findings from recent experimental studies of professional development and curriculum studies.

## THEORIES OF NONPARENTAL CARE

To develop guiding conceptual models, scholars of early childhood care and education often rely on broad socioecological and transactional frameworks, which incorporate multidimensional and bidirectional influences of both children and their environment in shaping developmental processes (Bronfenbrenner & Morris, 2006; Overton, 2013; Sameroff, 2009). These general systems models have been instrumental in building definitions of childcare quality because of their attention to multiple systems that influence early development, ranging from the proximal family system to more distal influences of the community and society. Attention is paid to how factors in one system influence individuals in that system and other systems (see Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1, for more details on developmental theories).

### General Systems Models

These theories all focus attention on the interactions between the young child and his or her primary caregivers, including the childcare providers, as providing the young child with emotional and intellectual support. The models posit that the primary caregivers play crucial roles in early development directly through interactions with the child and indirectly through determining the child's context. Furthermore, they emphasize bidirectional effects—caregivers influence children and the child's

characteristics and skills also influence the caregiver and how he or she interacts with the young child. These theories also draw attention to the continuity and communication between the child's caregivers at home, including parents and other primary guardians, and caregivers in the childcare context as being important for early development. The relations between the home and childcare contexts have both a direct and indirect impact on the young child's development in terms of their proximal interactions, and the bilateral influence of childrearing beliefs and practices of both parents and care providers. Finally, these models emphasize the need to examine early development within context, assuming that development will manifest differently when contexts are different.

These general system theories have been widely used in ECE research in two ways. First, questions about whether the effects of childcare experience differ (i.e., are moderated) by characteristics such as gender, ethnicity, and parenting practices and beliefs. Second, an important issue with ECE research has involved how the relationship and similarity of home environments to childcare environments affect early development.

Although useful as a conceptual framework, general systems theory frameworks, including Bronfenbrenner's Ecological Model and Overton's Relational Developmental Systems Theory, tend to be too general to yield specific hypotheses about how ECE directly affects children and families. Thus, researchers also use several other developmental theories that identify the specific aspects of children's ECE experiences thought to be consequential for specific developmental processes. Attachment theory focuses on the affective dimensions of interactions between children and their caregivers, specifically the role that the warmth and sensitivity of the caregiver plays in the social development of the young child (Bowlby, 1982; Howes & Spieker, 2008). Cognitive and social stimulation theories of development suggest that particular types of child-caregiver interactions promote cognitive skills and academic achievement (Piaget, 2007; Vygotsky, 2001). Finally, sociobiological theories argue for attention to the interaction between a child's biological systems and ECE settings to understand children's development, especially the development of self-control (Blair & Raver, 2012). These theories are complementary in many ways, but emphasize specific dimensions of children's childcare experiences, processes of influences, and dimensions of children's development. Thus, within a broad ecological framework, researchers draw from each theoretical orientation to pose different questions.



### Attachment Theory

Attachment theory argues that among the most fundamental influences on a child's development are the instrumental relationships that form between children and their caregivers, including ECE care providers, who consistently provide physical and emotional care for the child (Howes & Spieker, 2008). Because young children are so vulnerable, at their most basic level attachment relationships ensure children's survival, but they also promote physical and psychological development. Although children develop attachment relationships with more than one caregiver, these relationships develop in a hierarchical manner with the mother most often serving as the primary attachment figure (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1982; Bretherton, 1985). Consistent, warm, and sensitive interactions with caregivers lay the groundwork for a child's view of the world as predictable and safe, and view of the self as deserving of others' positive attention. When caregivers are able to soothe a child's distress, tiredness, and hunger as well, the child is more likely to form secure relationships with the caregiver.

A salient feature of caregiving relationships, according to Attachment Theory, is the level of continuity, consistency, and sensitivity of care of in a child's life (Howes & Spieker, 2008). Children internalize their attachment relationships and bring these cognitive representations to bear on subsequent relationships with adults and peers. Within secure attachment relationships, children's bids for attention and need for comfort are met with sensitive responses from attentive caregivers (Bretherton & Mulholland, 2008). Children with secure attachment working models have positive perceptions of themselves in relational contexts and may elicit increased language and cognitive support and other positive learning experiences from adults (Ahnert, Gunnar, Lamb, & Barthel, 2004; Belsky & Fearon, 2002). Thus, secure attachment relationships provide a foundation for experiences that will lead to learning and development (La Paro, Pianta, & Stuhlman, 2004). In contrast, within insecure attachment relationships, less positive interactions result in more negative views of the world and self.

Building trusting relationships with a caregiver requires repeated, predictable, and sensitive interactions over time through which children can begin to predict the consistency of the caregiver's behavior. For this reason, higher turnover and instability in childcare placements is thought to be a significant problem in the field of early care and education, as it may interfere with children's ability to form attachment

relationships with caregivers (Peisner-Feinberg et al., 2000; Tran & Weinraub, 2006). Likewise, the caregiver's mental health and stress levels are viewed as factors that affect their ability to be sensitive to children's needs (Blair & Raver, 2012). Finally, large group settings and high ratios of children to staff might also be of concern if they reduce the ability of caregivers to attend to the individual needs of children under their care.

### Cognitive and Social Stimulation Theories

The constructionist learning theories focus on the types and quality of learning opportunities provided within ECE settings. Two constructivist theories, Piaget's and Vygotsky's, are prominent in the study of ECE. Both theories argue that children have qualitatively different cognitive skills and capacities than adults, and that they construct their own learning by interacting with and operating upon their natural environments (Piaget, 2007; Vygotsky, 2001). These theories have been influential in shaping our understanding of the quality of childcare, and specifically the importance of the child's opportunity to interact with varied and rich materials.

Piaget's constructivist theory focuses on active participatory learning, with the implicit assumption that children coconstruct knowledge through actively engaging with their environment, developing and testing hypotheses as they learn new concepts (Gopnik, Meltzoff, & Kuhl, 1999). According to this theory, cognitive development is a dynamic process in which children are building and revising their understanding of the world as a result of both experiences and biological maturation. The role of the caregiver is to provide enriched learning environments that provoke children's curiosity, thereby facilitating children's cognitive development. The child is viewed as a "little scientist" who is forming cognitive structures to explain the world and testing hypotheses to refine their understanding. Children assimilate new information into their cognitive frameworks until new experiences or skills lead them to recognize the frameworks are inadequate, and as a result modify them.

Based on this theory, high-quality childcare involves caregivers ensuring that children have easy access to a variety of open-ended, age-appropriate activities and materials, which in turn will promote their active engagement in learning (Harms, Clifford, & Cryer, 2005; Stipek & Byler, 2004). Conversely, settings in which caregiver-led activities and didactic instruction dominate are viewed as developmentally inappropriate because young children's passive

engagement in learning does not adequately promote their learning and development (Bredekamp, 1987).

Vygotsky's sociocultural theory further describes the types of interactions with teachers and peers that are most beneficial to children's learning, specifically scaffolded instruction. Scaffolded instruction refers to learning that occurs when a more skilled partner engages with a child to help the child complete a task that is slightly above the child's skill level and therefore enables the child to accomplish tasks the child could not otherwise complete (Bodrova & Leong, 2006; Vygotsky, 2001). The idea is that to learn, children must be both challenged by tasks, but also that their efforts must be guided and supported by others.

Within this framework, the definition of high-quality care is further refined by incorporating the important active role that caregivers take in promoting children's learning (Berk & Winsler, 1995). The caregiver provides scaffolded instruction through continuously monitoring and revising the learning experiences provided to the child or a group of children. The caregiver then actively tracks the individual child and the group's conceptual understanding of an activity, and provides learning experiences that promote concepts and competencies that are slightly beyond their skill level. A key component of scaffolded instruction is also the provision of complex language interactions that encourage children's use of analysis and reasoning and the extent to which caregivers are individualizing their instruction and interactions based on the specific skill level of a child.

These two theories have resulted in a strong emphasis on ECE on three key aspects of the environment: (1) the sensitivity and warmth of the caregiver; (2) the extent of time available for unstructured play and the active exploration of an enriched environment; and (3) the caregiver's role in actively matching interactive activities to children's interests and their current skill levels, and directly supporting their learning in these activities.

### Sociobiological Theory

A recent development in the field of developmental science is greater attention to understanding how biological processes interact with social processes to produce development. The recent focus in developmental sciences on epigenetics (see Wachs, Chapter 21, this *Handbook*, this volume) is beginning to have its impact on ECE research.

Recent evidence from epigenetics research has implications for ECE research. The study of epigenetics provides

evidence that the quality of caregiving, typically by the mother, can affect the gene transcription of stress hormones (Meaney, 2010), which in turn can have impacts on neural connectivity, which affects self-control (Blair & Raver, 2012). The frequency and sensitivity of parenting during infancy appears to interact with the genome, with certain genes showing greater responsiveness in terms of DNA methylation under stressful contextual circumstances (Meaney, 2010). Adversity in early life appears to alter the development of neural and endocrine responses to stress, but this association appears to vary depending on the quality of parenting. Infants who experience more responsive parenting appear to show greater genetic expression for certain genes that code for stress responses, and appear more buffered from the negative impact of adversity. Furthermore, the extent to which such epigenetic responses are facilitative or limiting appears to depend on the context in which the infant is being raised—such that being more vigilant and fearful might be protective in more dangerous contexts and less optimal in less dangerous contexts.

Researchers posit that experiences in ECE settings can also shape children's cognitive development by affecting the expression of genes related to stress reactivity. By influencing the expression of these genes, it is thought that ECE experiences (e.g., quality of interactions with primary caregivers, or stress from being exposed to multiple peers) could also have long-term influence on the child's stress reactivity, and therefore long-term effects on the child's neural connectivity and subsequently on children's self-control and problem behavior (Pluess & Belsky, 2010). Pluess and Belsky (2010) argue that individual differences in temperament determine the level of the child's stress reactivity that is triggered by exposure to nonparental care and/or large groups of peers. They submit that children with more extreme personalities—either more inhibited or more reactive—have higher levels of stress reactivity in childcare, and thereby may be more likely to be influenced by the quality and quantity of their childcare experiences.

### Summary

Different types of conceptual frameworks have informed ECE research. The general systems model serves as the underlying model for most studies because of its depth and breadth. Research that focuses on determining whether ECE experiences influence subgroups of children differently and on how relations between parents and caregivers might enhance early development tends to use these

models explicitly. Other, more specific, conceptual frameworks have been used in other ECE research: the potential negative impact of nonmaternal care examined through Attachment Theory; the impact of the quality, focus, and type of instruction examined through constructionists theories; and the differential impact of ECE based on genes (i.e., gene  $\times$  environment hypotheses) examined through sociobiological theories.

## DIMENSIONS OF CHILDCARE

Children's experiences in ECE settings frequently differ along several key dimensions that relate to the quantity and quality of nonparental care that children experience. Whether children experience any regular nonparental care before they enter formal school is the first consideration related to the quantity of nonparental care. For those children who routinely experience nonparental care, the dimensions of the childcare experiences also include the age at which they entered routine nonparental care and number of hours per week (and possibly weeks per year) that they experience that care. In addition, the mode of care is also important—with most researchers at minimum distinguishing between center- or group-based settings and more informal care settings. Finally, regardless of setting or mode of care, ECE research has also focused a lot of study on the quality of ECE settings, both measuring contextual quality and its association to children's developmental outcomes.

ECE dimensions are not independent, and children's experiences across these dimensions vary with age, family characteristics and governmental policies. The complexity of ECE experiences over the course of childhood as well as how these experiences differ by individual and family circumstances make the study of ECE or any one dimension of it quite challenging. In this section, we provide an overview of models of ECE choice and the most important ECE dimensions and the empirical results of related ECE research.

### Use of Nonparental Care

Many infants, toddlers, and preschoolers now experience nonparental care. About half of the infants and toddlers and over 75% of preschoolers in the United States receive regular early education and care by individuals other than their parents. Our analyses of the nationally representative longitudinal survey of U.S. children born in 2001, the Early

Childhood Longitudinal Survey-Birth Cohort (ECLS-B; Andreassen, Fletcher, & West, 2005; Andreassen & Fletcher, 2007; Najarian, Snow, Lennon, & Kinsey, 2010), indicated that 50% of children at 9 months and 24 months and 20% of preschoolers (approximately 52 months in the ECLS-B) were cared for exclusively by their parents. Analysis of the 2005 National Household Education Survey (NHES) indicates that 60% of all children younger than 1 year old are cared for exclusively by their parents, but that this proportion decreases to 47% for all 2-year-olds and continues to decrease as children age, with just over 20% of all 4-year-olds being cared for exclusively by their parents (Mulligan, Brimhall, & West, 2005). The proportions of infants, toddlers, and preschoolers in nonparental care in other countries vary widely (Organisation for Economic Co-operation and Development [OECD], 2007).

Families make decisions about ECE arrangements weighing their needs and childrearing goals as well as economic constraints and community resources. Economic theory assumes that parents make childcare choices based on both their preferences and budget constraints (e.g., Blau & Hagy, 1998), and that parental employment decisions, at least in part, are jointly determined with childcare choices (P. M. Anderson, 2010; Waldfogel, 2002). That childcare choices are linked to parental employment is not surprising given that whether both parents work in the formal labor market as well as their work schedules have implications for the amount and type of nonparental care that children experience. Financial considerations, however, are not the only influence on parents' decisions. The degree to which they view childcare, especially preschool care, as preparing the child academically for school and socially for interacting with peers are other factors motivating parents to use childcare (Early & Burchinal, 2001). Thus it is not surprising that families using ECE are much more likely to have employed mothers and families who view childcare as a means to prepare children for school academically and socially.

Families that do and do not use nonparental care differ on demographic factors, perhaps linked to the reasons they use ECE. On average, families using routine nonmaternal care tend to have higher family incomes and parents with higher levels of parental education who engage in more responsive and stimulating interactions with the child (NICHD ECCRN, 2006). They are also more likely to consist of a single mother living without a partner or extended family in the same household, to be African American than White, and to have fewer young children in the household (Early & Burchinal, 2001).

## Type of Childcare

Many children experience several different types of ECE settings prior to entry to primary education. Modes of childcare are typically classified into the following categories: care by relatives, home-based care by unrelated adults, and center-based care. Sometimes, the home-based care category is further differentiated based on whether the care is provided in the child's home, as in the case of babysitters or nannies, or in another home, as in the case of family-based daycare providers. Home-based settings are typically considered to be "informal" arrangements, even if they involve contractual obligations, and center-based settings are typically considered to be formal arrangements. Formal arrangements are often thought to be beneficial in preparing preschoolers to transition to primary school because, like primary school, they provide structured experiences in classrooms with same-age peers. Relative and other informal settings often provide more stability, engagement, and stimulation for infants and toddlers, whereas centers often provide higher-quality care for preschoolers (Dowsett, Huston, Imes, & Gennetian, 2008; Li-Grining & Coley, 2006). The experiences within and across these settings tend to vary markedly by child age. Many children in ECE start during the infant and toddler years in an informal setting with a relative or in a childcare home, and switch to a formal center program as a preschooler (NICHD ECCRN, 2004). In the NICHD Study of Early Child Care and Youth Development (SECCYD), of the children with infant care, 43% switched from informal to formal settings, 24% remained in formal settings, 13% remained in informal settings, and 20% used a combination of informal and formal settings between birth and 54 months.

## Relative Childcare

Having a close relative care for a child, typically while the mother is at school or work, is almost always the first preference of parents, especially parents of infants and toddlers (Early & Burchinal, 2001). Care by a grandparent is the most common type of relative care, but grandfathers, aunts, uncles, siblings, and other family members may also provide such care. Data suggest that that 48% of 0- to 4-year-old children with employed mothers are cared for by a relative (Federal Interagency Forum on Child and Family Statistics, 2011), but whether relatives are providing the primary or secondary childcare varies with the child's age. Our analyses of the ECLS-B suggested that relatives provided the primary childcare for 25% of

the children at 9 months, 19% at 24 months, and 13% at 52 months. Whereas relatives often provide primary childcare for infants and toddlers, they are more likely to provide supplemental care before or after the child's center care. Other data indicated that rates of relative care remain at about 20% to 23% throughout childhood (e.g., the 2005 NHES; Mulligan, Brimhall, & West, 2005).

Relatives provide early care and education in the child's home or in the relative's home (Early & Burchinal, 2001). Parents often prefer relative care because it most closely resembles the care they would provide for their children, including playing with the child as well as providing routine care such as feeding, diapering, and putting children down for a nap. Although there may be daily activities and enriching outings, few relatives providing ECE make use of any structured curricula or instructional materials. Such care arrangements often include multiple children from one family, and may also include children from different families (e.g., cousins cared for by a grandmother). In the NICHD SECCYD, the mean number of children in this setting ranged from 1.6 at 6 months to 2.4 at 36 months (NICHD ECCRN, 2006). More recent national data suggest a slightly lower group size with about 1.5 children per caregiver in relative care across early childhood (Mulligan et al., 2005).

Some features of relative care are quite attractive to parents, although it also may have some important drawbacks as well (Gordon, Kaestner, & Korenman, 2008). Many parents believe relative care is safer and of higher quality than ECE provided by an unrelated adult because the relative already cares about the child and will have a long-term relationship with him or her. In addition, parents often prefer relatives because they share language, values, beliefs, and childcare practices. Finally, relatives are rarely compensated for the care they provide and often are able to provide care during evening and weekend hours when it is difficult to find other childcare options. On the other hand, relative care is not subject to state regulations and may be less reliable than purchased care. The relative's schedule and, thus, availability may change suddenly, and in the absence of alternative care providers parents may be unable to find back-up childcare. For example, a relative's last-minute doctor's appointment or illness may leave the family without needed childcare (Gordon et al., 2008). As children age, many parents believe that they benefit from socialization with a wider set of peers and the more structured learning environments found in center-based early education programs. For these reasons, many parents transition from relative care into home-based



or center-based care when the child reaches the age of 3 or 4.

### *Home-Based Childcare*

Many children are cared for by unrelated adults in either their own home or someone else's home. Home-based care, or family daycare, typically describes purchased care in the home of the care provider. Because home providers are self-employed, they often take in more children than relatives, but fewer than center-based care. In the NICHD SECCYD, the modal size was one care provider and four to six children when the target child was an infant or toddler and five to seven children when the target child was a preschooler (NICHD ECCRN, 2006). The children's ages often vary, including infants, toddlers, and preschoolers during the entire day, and school-age children before and after school. The home provider is typically the only care provider in the setting, but she or he can hire an assistant or have her or his family members help when needed.

Home-based care is the modal type of care for infants and toddlers in the United States and most countries that do not subsidize other forms of care for children that age. Our analyses of the ECLS-B indicated that 15% of all children (30% of children in any type of childcare) at 9 and 24 months, and 8% of all children (10% of children in childcare) at preschool experience home-based childcare. Large survey studies suggest that most children are cared for in these settings for between 30 and 40 hours per week, although there is considerable variation (Mulligan et al., 2005; NICHD ECCRN, 2006).

Home-based care varies tremendously in the extent to which children's days are structured. Some home-based providers incorporate many of the practices found in center-based programs, such as the use of set schedules and routines with specified learning activities, access to a range of age-appropriate play materials, and the use of learning curricula. Others are far less structured and provide little in the way of stimulation, for example, relying on television or videos to keep children entertained.

### *Center Childcare*

Childcare centers provide care for infants, toddlers, and preschoolers. Typically, a center consists of several classrooms that are organized by age of the children, and often have at least one lead teacher and an assistant teacher. The number of children per classroom and the ratio of adult teachers to children are regulated by the state, and always require fewer children per adult for younger children. The classrooms tend to be more structured than

informal care and usually have daily routines and scheduled activities (Dowsett et al., 2008). A formal curriculum or teacher-led instructional activities is typically provided in preschool classrooms, but not in infant and toddler classrooms.

In the United States, the higher level of staffing and associated higher personnel costs makes the provision of infant care significantly more costly. Infant and toddler center classrooms, on average, include between 2 and 3 adult caregivers and 9 to 11 infants or toddlers in same-age classrooms (NICHD ECCRN, 2006), with an average of 3.9 children per caregiver in center-based care for infants (Mulligan et al., 2005). For this reason, most ECE centers have classrooms for preschoolers, whereas far fewer have classrooms for infants and toddlers.

Center-based care for infants and toddlers is more frequently used in countries that subsidize the childcare arrangements, such as Norway or the Netherlands, and is provided, but less frequently used, in countries where most parents pay for most or all costs such as the United States or the United Kingdom (OECD, 2007). For example, in the United States according to our analyses of the ECLS-B, the proportion of U.S. children in centers at 9 months was 9% of all children (18% of children in childcare) and at 24 months was 16% of all children (33% of children in childcare).

Center-based care for 3- to 5-year-old children is often labeled *preschool*, but it includes three broad types of programs serving children 2 years prior to kindergarten (Ages 3 to 5): private childcare centers and preschools, Head Start, and prekindergarten programs supported by state and local education funds. Center care for preschoolers is provided in classrooms, typically with children of similar ages with one or more teachers. In the NICHD SECCYD, on average there were 2 to 2.5 adults and 14 to 16 same-age peers per center classroom when the children were 36 and 54 months (NICHD ECCRN, 2006). Analysis of the NHES data found on average that the child-to-adult ratio in the preschool classroom was 6.6 (Mulligan et al., 2005).

In contrast to infant and toddler center care, for preschoolers there is typically some form of curriculum that is used to organize instruction in early academic skills, typically general concepts, reading, and math. Some programs are part-time, provided for a few hours per week, sometimes no more than 2 hours per day, whereas others are full-time, provided for 40 or more hours a week (e.g., from 8 a.m. to 5 p.m., Monday through Friday). Many programs share some common features in their daily routines. The class likely starts with "circle time" in which

the lead teacher gathers all the children for a discussion of the day, a book reading, and perhaps singing of a song. This is often followed with instructional activities, either involving the teacher talking with all children in the class or working with small groups. Full-day programs include lunch, naptime, and typically outdoor or other types of free-play in the afternoon. One study of public prekindergarten programs found that the 4-year-old children spend only 53% of the morning in academic related activities. The academically related activities tended to focus on developing literacy skills with only 6% of the time spent on math and 23% on science or social studies (Bryant et al., 2002). Their mornings were divided, on average, into 23% in whole group activities, 33% in free-choice activities, 6% in small groups, 14% on meals, and 21% on transitions, bathrooms, and other routine activities.

Center-based care in privately owned or nonprofit centers has been the modal form of childcare for preschoolers for over 20 years (Early & Burchinal, 2001), and center-based care for low-income children in federal- or state-funded programs has become widespread. Center care is widely used for preschoolers in the United States, Canada, Europe, and many Asian countries because, in part, it is viewed as a means to prepare children for the transition to formal education in primary schools. According to our analyses of the ECLS-B, 59% of all children and 73% of children in nonparental care attended a childcare center as a preschooler in 2005. About 75% of U.S. children attended a center-based program the year prior to kindergarten and just over half attended a center-based program the year before that (at Age 3) (Federal Interagency Forum on Child and Family Statistics, 2011).

Childcare centers can be further divided according to auspice into for-profit centers, nonprofit centers, and publicly funded programs. For-profit centers include those owned by an individual owner and centers that are part of either corporate franchises or chains. Nonprofit centers range from parent cooperatives to programs directed as part of organizations such as the YMCA and religious institutions. Finally, the federal government directly funds Head Start grantees to provide early education programs for low-income children, and state and local departments of education support early education for 3- and 4-year olds through public prekindergarten programs. These programs are discussed in detail in the section "U.S. Public Policy."

### *Family Selection of Type of Care*

Parents decide what type of care to use, and it is clear that the child's age, family resources, and parental values

all play a role in childcare choices. These decisions are constrained by their family's income and the cost of care (Chaudry, Pedroza, & Sandstrom, 2012). Given the high cost of care, it is not surprising that the use of center-based care increases with family income (Lamb, 1998; Rigby, Ryan, & Brooks-Gunn, 2007), and families are more likely to use center care than other types of care when their income increases or when parents have more education (Blau & Hagy, 1998). Similarly, parents are more likely to move their child from informal to center care during the preschool years than during the infant and toddler years, perhaps in part because costs of center care are much lower for preschoolers and in part because parents value a more home-like setting for very young children (Rigby et al, 2007). Decisions about the type of care to use are also related to the parents' work schedule. Most center-based programs operate only during the day; thus parents who need care during evenings and weekends often have no choice but to rely on more informal arrangements (Henly & Lambert, 2005).

Although economic considerations are central to understanding ECE arrangements, sociological and other perspectives argue for the consideration of a broader set of factors. Meyers and Jordan (2006) described childcare choice as a complicated and dynamic process of accommodation to the market, family, and child needs as well as social realities, including cultural preferences (see also Li-Grining & Coley, 2006). Some evidence suggests that parents are more likely to use center care when they value the perceived educational benefits of center programs for their children's early learning (J. P. Greenberg, 2011; Augustine, Cavanagh, & Crosnoe, 2009). Other evidence suggests that, particularly among low-income parents, parents face a complex task of trying to align their preferences and logistical constraints (Meyers & Jordan, 2006). Ethnicity has also consistently been linked to patterns of early childhood education, even after holding constant socioeconomic factors mentioned above. Compared to European Americans, preschool age African American children are more likely to be enrolled in center-based care settings and Latino/a American children and children of immigrants are less likely to be in such settings (Magnuson, Meyers, & Waldfogel, 2007). Two reasons have been given for these different patterns of enrollment. First, Latino/a American and immigrant groups may have less access to center-based ECE programs, as these programs may not be available in ethnic enclave neighborhoods (Gormley, 2008) and these groups may face language barriers. Second, some have argued that Latino/a American and immigrant

families may prefer informal settings because they view informal settings with caregivers of the same ethnicity or who speak the same language as providing care that is more consistent with their own cultural models of childrearing and better able to serve their children (Liang, Fuller, & Singer, 2000; Tang, Coley, & Votruba-Drzal, 2012).

### Childcare Quality

Another important dimension of early care and education is the quality of children's experience in a setting. The term *quality* is used frequently, but imprecisely, in the field of ECE. In the past 20 years, the study of ECE has been dominated by a few multidimensional global measures of classroom processes that taken together describe childcare quality. In addition, a few narrow measures of specific dimensions of classroom or program practices are regularly used in ECE studies and often referred to more generally as measures of ECE quality. Finally, some researchers measure structural dimensions of the programs, most often caregiver education and training and ratio of the number of caregivers to the number of children in the classroom, and use these constructs as indicators of ECE quality. Despite the many ways in which ECE experiences can be quantified, how best to define and assess ECE quality remains an important research and policy issue.

### ECE Quality

The position paper by the National Association for the Education of Young Children (2009) provides one of the most comprehensive and widely accepted views of what constitutes high-quality ECE. Based on theoretical models of development, it presents a framework for developmentally appropriate practices that offers five broad practice guidelines. The first guideline describes creating a caring community of learners, in which all individuals are respected and valued as individuals. Caregivers model and promote responsibility and self-regulation, set clear and reasonable limits, and listen to and acknowledge children's feelings, including feelings of frustration. The second guideline involves teaching to enhance development and learning. This involves understanding both the desired goals for instruction, and how best to scaffold each child's learning. Caregivers should understand and incorporate the child's cultural and linguistic background into teaching and all interactions with children. The third guideline involves planning curriculum to achieve important goals and involves understanding the selected curriculum and adapting it if needed to match children's skills

and background. The fourth guideline involves monitoring children's progress using assessments that are ongoing, strategic, and purposeful and used in planning and adapting instruction for the group and for individuals and in interactions with individual children. The final guideline involves establishing reciprocal relationships with families in which there is mutual respect and cooperation and the primacy of the families' choices and goals without abdicating responsibilities for supporting children's learning and development.

Each of these dimensions, all of which are based on developmental theory, is reflected in existing measures of ECE quality to varying extents. The most comprehensive measure of ECE programs is the environmental rating scales (ERS), including the Early Childhood Environment Rating Scale (ECERS; Harms, Clifford, & Cryer, 2005) to describe quality of preschool center care, Infant-Toddler Environmental Rating Scale (ITERS; Harms, Cryer, & Clifford, 2003), and Family Day Care Environment Rating Scale (FDCRS; Harms, Cryer, & Clifford, 2007). These measures are largely based on a constructive theory of cognitive development and emphasize the types and variety of activities provided and the extent to which the child is an active participant in the learning process. Each also assesses the following additional dimensions of care: the provider's sensitivity and responsiveness, health-related practices and the safety of the setting, and classroom management practices. According to these measures, high-quality classroom settings have at least five different interest centers, conversations during meal and snack time, a wide selection of books that are read in formal class activities and in informal interactions with the teacher, and activities that encourage children to think, talk about, and reason about their experiences (Harms et al., 2005). The breadth and applicability to differing modes of care likely explain the widespread use of these quality measures in research and policy contexts.

Other measures of quality, informed by attachment theory, focus more specifically on the quality of interactions between caregivers and children. Some capture the extent to which the caregiver provides a secure base for children and encourages autonomy (e.g., Observational Record and the Childcare Environment; see NICHD ECCRN, 1997). Others more generally consider caregiver warmth and sensitivity (Caregiver Interaction Scale, see Arnett, 1989). A recent development has been the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008), which like prior measures assesses the quality of the teacher-child interactions, but unlike earlier measures also

considers instructional support provided by caregivers and the management of the classroom. The CLASS instrument, which is applicable only to preschools, measures the extent to which the teacher is warm and sensitive, promotes language and concept development, and organizes the classroom to minimize misbehavior and maximize time spent in learning activities. According to this measure, the teachers in high-quality classrooms have frequent warm and responsive interactions with children, and they scaffold instruction. She/he is intentionally teaching academic skills through understanding the developmental learning sequence and ensuring that prerequisite skills are understood before higher-order skills are introduced. The teacher attends to each child, individualizing the feedback to match his or her skill level. The teachers talk frequently with each student in multiturn conversations in which the adult elaborates on the students' responses by asking open-ended questions (Pianta, La Paro, et al., 2008).

Other measures describe the quality of instruction within specific domains such as literacy (e.g., Early Language and Literacy Classroom Observation, ELLCO; Smith, Dickinson, Sangeorge, & Anastasopoulos, 2002) or math (Classroom Observation of Early Mathematics Environment and Teaching, COEMET; Clements & Sarama, 2008) or within both literacy and numeracy (e.g., ECERS-Extension, ECERS-E; Sylva, Siraj-Blatchford, & Taggart, 2003; Teacher Behavior Rating Scale, TBRs; Landry, Crawford, Gunnewig, & Swank, 2000). These measures often focus on the quality and time spent teaching specific literacy or numeracy content and skills.

Some of these measures are highly correlated, but others are relatively independent. Measures of caregiver warmth and sensitivity, such as the ECERS-total and CLASS Emotional Support, tend to be highly correlated, whereas measures of instructional quality are not strongly correlated with measures of warmth and sensitivity or with other content areas (Pianta et al, 2005; Burchinal, Kainz, & Cai, 2011). Therefore, it becomes important to identify which dimension of quality is being assessed when examining associations between ECE quality and child outcomes.

**Structural Quality.** As part of measuring the quality of ECE settings, researchers have examined factors that are thought to provide a foundation for high-quality care. Within this research literature, these factors have been labeled *structural quality* whereas the quality of a child's experiences in the ECE setting has been labeled *process quality*. These structural quality characteristics are both at the caregiver and program level. They include factors such

as the caregiver's education and training, adult-to-child ratio and group size, and administrative support. These are sometimes viewed as necessary, but insufficient, conditions for a setting to provide high-quality care; they are always viewed as factors that increase the likelihood of high-quality care (NICHD ECCRN, 1999, 2002a).

A relatively low child-to-adult ratio and group size are needed to permit adults to interact with individual children or small groups of children. The American Academy of Pediatrics (AAP, 2005) recommendations for adult-child ratios and group size vary by the type of setting and age of the child: 1:3 for infants (younger than 1 year) with a maximum group size of 6; 1:4 for young toddlers (1 to 2 years) with a maximum group size of 8; 1:5 for older toddlers (2 to 3 years) with a maximum group size of 10; 1:7 for 3- to 4-year-olds with a maximum group size of 14; and 1:8 for 4- to 6-year-old preschoolers with a maximum group size of 16 (AAP, 2005). Recommendations for mixed-age settings, such as typically occur in home-based settings, are 1:6 when there are no infants younger than 2 years, 1:5 with one infant younger than 2 years, and 1:4 with two infants younger than 2 years (AAP, 2005).

Adequate space, access to a variety of age-appropriate activities, and attention to health and safety concerns are other program-level characteristics that are regarded as important structural quality measures. These include hand-washing policies for caregiver and children after diapering and before touching food, safe play equipment, universal back-to-sleep practices, toxins out of reach, and safe administration of medicines (AAP, 2005).

Caregiver education is a common indicator of structural childcare quality, as it is viewed as a proxy for caregiver skill. It is widely assumed that higher levels of education, especially certification to teach in early childhood education or a related field, provide caregivers with the knowledge and practices that translate into higher-quality ECE. Noncredit professional development training for caregivers is also assumed to introduce and reinforce teaching skills, with growing recognition that focused, explicit, and intense mentoring and coaching provide the strongest opportunities for caregivers to acquire and maintain new skills (Advisory Committee on Head Start Research and Evaluation, 2012). The director's education, training, and administrative style are assumed to play a foundational role in determining the quality of care provided to children through hiring decisions, selection of curricula, and supervision. The American Academy of Pediatrics (2005) recommends that the director have a college degree in ECE and caregivers have



a child development associate's credential and ongoing in-service training.

Curricula are assumed to play a critical role in creating learning opportunities for young children. Curricula should provide the caregiver with a structured approach to providing children with learning opportunities. Curricula can vary from child-centered approaches that provide children with activities and scaffold learning opportunities (e.g., Montessori) to teacher-directed approaches in which the teacher has a manual with scripts that present the learning materials (e.g., Literacy Express). Many of these teacher-directed approaches are based on the assumption that there is a developmental trajectory—that children need to acquire a basic set of skills that lay the foundation for learning the next set of skills—and try to monitor the extent to which each set of skills is learned.

Some aspects of structural quality may be necessary to ensure the provision of high-quality care. The combination of low ratios and adequate teacher education has been the hallmark of high-quality care (NICHD ECCRN, 1999, 2002a). There is growing recognition that integration of focused, explicit, and intentional curricula used with implicit tools for monitoring children's learning and ongoing coaching in the use of that curriculum and child-monitoring system provides the strongest opportunity for quality improvement (Advisory Committee on Head Start Research and Evaluation, 2012).

**Level of ECE Quality.** Considerable evidence documents the level of childcare quality in the United States. Quality of childcare, regardless of measure, tends to be in the medium range for preschoolers and in the low-to-medium range for infants and toddlers, but there are differences depending on the type of childcare setting. The environmental rating scales (e.g., ECERS-R) define quality based on the quality and frequency of the interactions between caregivers and children and of the engagement in age-appropriate activities in the environment as a total score of 1–3, medium quality as a total score of 3–5, and high quality as a total score of 5–7. Analyses of ECERS and ITERS in the Cost, Quality, and Outcomes study in four states selected for variation in average income and state regulation of childcare policies indicated variability in the quality of childcare, but on average infant-toddler center-based care tended to be of low quality while preschool center care tended to be of medium quality (Phillipsen, Burchinal, Howes, & Cryer, 1997). Similar conclusions were drawn from the NICHD SECCYD when findings were simulated to represent the

United States (NICHD ECCRN, 2000a). More specifically, the quality of infant and toddler care was highest when provided by a relative, next highest in home-based care, and lowest in center care. In contrast, center care was of higher quality than home-based care for preschoolers (NICHD ECCRN, 2004). Our analyses of the nationally representative data from the children of the same age-cohort in the ECLS-B also suggested that quality of care was in the medium range according to the ERS, and that quality was lower in home-based care than in center-based care.

The quality of center-based care tends to vary across auspice. In the United States, low-income children are much more likely to experience higher-quality care when they attend publicly funded center-based programs (Helburn, 1996). Data from the National Center for Early Development and Learning's study of 11 state prekindergarten programs (Pianta et al., 2005) found large variability in quality of care across states, with the average level of care being in the medium to high range according to the ECERS and CLASS Emotional Support and in the low to medium range according to the CLASS Instructional Support. A more recent evaluation of the most promising prekindergarten programs suggested high quality, at least in the selected programs (Barnett, Epstein, Friedman, Stevenson Boyd, & Hustedt, 2008). The Head Start Impact Study (Puma, Bell, Cook, Heid, & Lopez, 2005) and the Head Start Family and Child Experiences Survey (FACES; 2006; Aikens et al., 2010) suggested that Head Start quality is also variable, albeit less so than in prekindergarten programs, and that average ECERS and CLASS scores are similar or slightly lower than those observed in the prekindergarten evaluations.

Quality of ECE ranges widely throughout the world. Quality of preschool center care in the United Kingdom tended to be in the medium to medium to high range according to the ECERS-R and in the low to medium range in terms of instructional quality in a large cohort study (EPPE, 2004). An earlier across-country comparison suggested that quality of care based on the ECERS-R was higher in Germany and Austria and lower in Spain and Portugal (Tietze, Cryer, Bairrão, Palacios, & Wetzels, 1996). A more recent study suggested that ECE quality remained relatively low in Portuguese centers where group sizes tend to be quite large (Barros & Aguiar, 2010; Pinto, Pessanha, & Aguiar, 2013). Small-scale studies in Asian countries, such as China and Cambodia, and East African countries, such as Uganda and Zanzibar, suggest quality tends to be low in general but higher in public preschools (Malmberg, Mwaura, & Sylva, 2011; Rao et al., 2012).

**Family Selection of ECE Quality.** Many of the same factors that predict use of center care also predict the use of higher-quality care (NICHD ECCRN, 2006). Not surprisingly, higher-quality care is more expensive on average, and parents selecting higher-quality care tend to have more money and more education, especially when selecting care for infants and toddlers (Rigby et al., 2007). The publicly funded programs such as Head Start and prekindergarten, on average, provide low-income families with higher-quality options in attempts to reduce the income gap in ECE for preschoolers (Pianta et al., 2009). Finally, home environments and parenting characteristics have also been linked to patterns of ECE. Generally higher-quality home environments as well as early literacy and educational activities in the home, such as book reading, are linked with greater likelihood of choosing center-based care (Burchinal & Nelson, 2000; Tang et al., 2012). There is also evidence that more authoritative parenting practices also predict higher-quality nonparental care for children (NICHD ECCRN, 2006).

### **ECE Quantity**

The final dimension of ECE experiences to be considered is the amount of nonparental childcare that children experience. Much of the impetus to study the quantity of nonparental care is rooted in a concern that too much ECE may be detrimental to children's development. As with quality, there are several dimensions of childcare quantity and, thus, in examining its relation with child outcomes. The basic definition involves the average or typical number of hours per week that the child is cared for by caregivers other than the parents at a particular point in time or averaged over time. These definitions are employed in many studies, including the nationally representative ECLS-B. A second dimension involves the age at which the child started nonparental care and the amount of time in terms of weeks or months that the child experienced nonparental care over a specified period of time. Many studies collect retrospective information, asking at what age children began experiencing ECE. These two definitions are often combined, as in most analyses of the NICHD ECCRN, which computes the average hours per week of care from the child's first month through the last preschool interview at 54 months (NICHD ECCRN, 2003a, 2006). A third dimension describes the number of different childcare arrangements and the amount of time spent in each setting (e.g., Loeb, Bridges, Bassok, Fuller, & Rumberger, 2007; Morrissey, 2008, 2009).

### **Hours per Week**

The number of hours of childcare children experience in an average week varies widely and depends on the extent of parents' employment and use of the arrangement to provide the child with educational and social learning opportunities. Not surprisingly, children tend to experience more hours of childcare when mothers are employed, and on average experience about 30 to 40 hours per week when mothers are employed full-time (Waldfogel, 2002). Our analyses of the ECLS-B indicated that the average hours of nonparental care per week for the 2001 birth-cohort ranged between 31 for infants, 33 for toddlers, and 29 for preschoolers, but the hours of care is considerably higher when the mother is employed full-time than when she is not.

Educational preschools, including some state prekindergarten and Head Start programs, often provide part-time programs, with growing focus on providing "wrap-around" care to children whose mothers are employed (Clifford et al., 2005). These programs typically offer about 20 hours of care per week to children, although they can vary from as few as 5 to 10 hours per week to 40 hours per week of care. The length of time in a given setting tends to vary, but relatively few children stay in the same childcare setting from entry into childcare to entry to primary school (NICHD ECCRN, 2004).

### **Number of Arrangements**

There is growing attention to the number of childcare arrangements that a child experiences at any given time or across time. Most children experience change, starting with home-based care or relative-care as an infant and moving into center-based care as a preschooler. Many children experience more frequent changes over time as parents switch caregivers or cycle in and out of employment due to job changes and the birth of siblings. Studies in the United States (Morrissey, 2009) and Australia (Neilsen-Hewett, Sweller, Taylor, Harrison, & Bowes, in press) suggest that common components of multiple setting arrangements include care by a relative (regardless of the child's age) and center care for preschoolers. For example, the Australian study indicated that the modal pattern involved part-time center care for preschoolers and grandparents who picked them up from the center and care for the child until parents finished working. The proportions of children experiencing more than one care setting among children in childcare ranged from 15% in the SECCYD (Morrissey, 2009) to 25% in the nationally representative surveys (Early & Burchinal, 2001; J. O. Johnson, 2005).

### *Continuity of Caregivers*

Whether the child experiences changes in the primary childcare provider has also been examined because attachment theory focuses on the quality and continuity of the relationship between the very young child and his or her caregivers. Careful study of changes in primary caregivers suggest that most preschoolers experience some changes as they switch from one setting to another or as they switch from one classroom to another within the same center, and many infants experience changes due to modifications in informal care arrangements (NICHD ECCRN, 1997). One study of caregiver continuity for infants and toddlers in center care indicated that teacher turnover made it difficult to ensure continuity for the infants and toddlers, even when that was the intent (Cryer et al., 2005).

### *Family Selection of Quantity of Care*

Whereas most of the studies of family selection factors have focused on whether childcare was used, and if so, the type and quality of the ECE, the family decisions about the amount of childcare seem to be driven largely by parental employment and the local childcare options. Children tend to spend longer hours in ECE settings when parents are employed full-time than part-time, have more income and education, and are in center settings as infants and toddlers and in informal settings as preschoolers (NICHD ECCRN, 2006). Children experience more different care settings when mothers work part-time or when the child is enrolled in a program that does not offer 8 hours of care a day (Morrissey, 2009).

### **Summary**

Parents select the childcare experiences of their very young children, but the quality, quantity, and type of care varies depending on public policies, family characteristics, and the child's age. Over half of U.S. parents decide to use ECE settings for their infants and toddlers, typically because the parents are employed. The proportions of infants in ECE are much lower in countries with more generous family leave policies. Much of the ECE for infants and toddlers is provided by relatives or nonrelatives in home-based settings, except in countries that subsidize center-based care for toddlers. Preschool-age children are more likely to be in ECE, and are typically in center-based care in the United States, Europe, and increasingly in South America, Asia, and Africa. Publicly funded programs, almost exclusively in center-based settings, were developed to increase

educational opportunities for low-income children in the United States and other countries. A few countries make publicly funded programs available to all 3- or 4-year-olds. These publicly funded programs (e.g., pre-K and Head Start) provide these children with higher-quality center care than they would otherwise experience. ECE quality, defined by the frequency, warmth, and stimulation of interactions between caregivers and children, varies widely across type of setting and the child's age. Overall, children are more likely to be in ECE, and to experience higher-quality care in center settings, when parents have higher incomes, more education, and provide more responsive and stimulating care at home.

## **EARLY CARE AND EDUCATION AND CHILD OUTCOMES**

A large body of scholarship examines how ECE experiences affect family well-being and children's development. In recent years this scholarship is notable for its emphasis on methodological rigor. Starting about 30 years ago, ECE researchers began to take child, family, and community factors into account when examining childcare effects on children (Lamb, 1998). The past 15 years have been marked by increasing sophistication in the methods used to account for the potential confounding effects of these factors when examining the impact of ECE. In addition, there has been growing attention to the need to examine ECE dimensions together, not separately (NICHD ECCRN, 2002b). ECE research during the past 10 to 15 years has attempted to examine each dimension while addressing concerns about selection bias and the potential overlap among different dimensions of childcare. These findings are discussed below, along with a discussion of the potential problems with inferring childcare effects due to selection issues and overlap among the ECE dimensions.

### **Selection Issues and Inferring Childcare Effects**

Studying the effects of differing dimensions of childcare is complicated by the fact that, as described above, ECE arrangements are made and changed in particular contexts, and thus it is difficult to estimate the effects of the childcare per se rather than the child, family (see Elder, Shanahan, & Jennings, Chapter 2 & Bradley, Chapter 12, this *Handbook*, this volume), and community factors (see Staff, Mont'Alvao, & Mortimer, Chapter 9, this *Handbook*, this volume) that influence ECE arrangements and early

development. Multiple aspects of family background have been associated with different aspects of care experiences. The NICHD SECCYD suggests that children with exclusive parental care at each age and children who entered ECE as preschoolers had mothers with less education, more depressive symptoms, less sensitive parenting styles, and families with less income than those who enter non-parental care at an earlier age (NICHD ECCRN, 1997, 2006). Multiple care arrangements were also more likely when mothers had more education and provided more sensitive parenting, but worked fewer hours (Morrissey, 2009). Children experienced longer hours of care per week when mothers had slightly more education and fewer depressive symptoms and families had higher incomes. ECE quality was higher when mothers had more education, and children were European American rather than African American or Latino/a American. In addition, ECE quality tended to be higher when the mother showed more sensitivity and respect for autonomy during interactions with the child. Similar findings with regard to associations between maternal education and family income with timing of ECE and the type and quality of care have been reported for Australian (Ungerer & Harrison, 2008), Canadian (Geoffroy et al., 2012), and Dutch families (van Gameren & Ooms, 2009). These complicated patterns of associations challenge researchers' ability to design studies that can tease out unique effects of care on children.

In addition, research has often focused on one particular dimension of ECE such as type, age of entrance, or quality despite the fact that these factors often cluster together in meaningful ways, which may influence the ability to identify their unique effects. In the SECCYD, children who experienced higher-quality ECE tended to experience somewhat fewer hours per week in childcare at 6, 15, 24, 36, and 54 months (NICHD ECCRN, 2003b, 2006). Higher quality was observed in informal settings, especially care by grandparents, during infancy, and in centers during the preschool years (Dowsett et al., 2008). Children in center care tend to experience longer hours of care during infancy, but shorter hours during preschool. Not surprisingly, children who enter ECE earlier tend to experience more hours per week of care and more weeks of care overall. Frequent changes in childcare settings are more common when the child experiences fewer hours of care per week, whereas multiple settings at a given age are more likely when one of the settings is center care (Morrissey, 2009). Analyses of the ECLS-B data reveal similar associations among use of childcare, and ECE type, quality, and quantity (Espinosa et al., in review).

Due to potential selection biases and clustering of ECE dimensions, research on many ECE topics has struggled to provide convincing estimates of causal effects rather than descriptive associations. The most convincing estimates of the effects of early childcare and education come from random-assignment experimental studies. The design of these studies assures that children in program "treatment" are compared to children who were not in the program but are otherwise equivalent on important background characteristics, and thus any differences in children's outcomes must be due to their experiences in care. However, random assignment studies are rare, and typically evaluate only the effects of program models compared to a no-treatment group. For example, the recent national Head Start impact study compared 3- and 4-year-olds who were and were not assigned to attend Head Start programs (Puma et al., 2005). There have been some early random assignments of quality improvement initiatives, but it is not surprising that there have not been experimental studies about the age of entrance into care or even the dosage of care for infants and toddlers.

Given the difficulty of implementing random assignment studies, the next best strategies are quasi-experimental, and although they typically use observational data, they employ analytic techniques that adjust for potential confounds across treatment groups. Variations on regression discontinuity designs have been used successfully in several evaluations of prekindergarten programs (Gormley, 2008; Weiland & Yoshikawa, 2013). In these studies, children who enrolled in the program and whose birthdays fall just before and just after the age eligibility cutoff are compared. As a result of their slight age differences, it is possible to compare those who attended prekindergarten during the academic year and the following year enter kindergarten, to children just a few days younger who did not start the prekindergarten program until the following year. Such variations on regression discontinuity (RD) designs are appealing, but as implemented they require some additional assumptions, and they can be implemented to evaluate program models only when programs have strict eligibility criteria. Thus, many research questions cannot be answered with these designs (see Weiland & Yoshikawa, 2011, for a discussion of RD design issues).

Another increasingly common quasi-experimental approach used in ECE research involves variations on propensity score modeling. These approaches use natural variation in ECE but use observed characteristics of the children and families to construct a comparison group that is similar to the "treatment" group, as defined by the



researcher. The analytic process involves a three-step estimation, in which the propensity to experience the treatment is modeled in the first step, comparison group individuals are matched to treatment individuals based on this propensity score, and then differences across the matched groups are compared. This method is particularly useful when there are large differences on many important measured characteristics across the groups being compared as long as there are sufficient numbers of families who overlap on these characteristics (Winship & Morgan, 1999).

Finally, there are other nonexperimental studies that consider the effects of typical early childcare and education on children's school readiness by comparing naturally occurring variation in ECE, with few adjustments for possible confounding differences. These observational studies have the well-known disadvantage of not being able to rule out the possibility that any presumed effects are due to unobserved characteristics of children or families that are associated with differential selection into alternative ECE experiences. Analyses often include only a few statistical controls for potential selection factors, raising the possibility that the resulting associations are spurious rather than causal (Winship & Morgan, 1999). Recently, "value-added" models have added a pretest score as a covariate to account, in part, for preexisting differences in child outcomes at entry to the ECE setting (Duncan et al., 2007). These models, even the value-added models, are relatively easy to implement, and can be applied to a wide range of ECE research questions. Consequently, although results from observational studies are often more generalizable to other programs and children, these results typically fall short of providing convincing evidence of causal effects (Duncan & Gibson-Davis, 2006).

### ECE and Child Outcomes

Early ECE research was concerned that routine nonmaternal care would impair security of the infant-mother attachment. Early evidence suggested that children with early and extensive childcare were more likely to have insecure attachments (see Belsky, 1999). The SECCYD was funded, in large part, to address this question. The study found that ECE experiences, including whether the child experienced nonmaternal care, were not related to the infant-mother attachment (NICHD ECCRN, 2001). Other research has examined whether exclusive maternal or parental care is related to early cognitive and social development. Comparisons of SECCYD children with and without exclusive maternal care through 15, 24, 36, and

54 months revealed children with exclusive maternal care tended to be from more disadvantaged families, and after accounting for this, there were no significant differences in preschool outcomes and only one significant difference favoring ECE children in infant and toddler outcomes (NICHD ECCRN, 2006). In contrast, analyses of the SECCYD and nationally representative studies indicated that middle-class European American children had lower levels of cognitive skills if their mothers were employed full time during the child's first year (Brooks-Gunn, Han, & Waldfogel, 2002; Han, Waldfogel, & Brooks-Gunn, 2001; Waldfogel, Han, & Brooks-Gunn, 2002). Similar findings were not observed among African American or Hispanic infants or infants from low-income families in the United States (Burchinal & Clarke-Stewart, 2007; Dunifon, Kalil, & Danziger, 2003; Fuller et al., 2002), Canada (Geoffroy et al., 2007), or Britain (Côté, Doyle, Petitclerc, & Timmins, 2013). Furthermore, some evidence suggests that maternal employment in the first year was related to more positive social-emotional functioning for African American low-income children (Coley & Lombardi, 2013).

### Childcare Type and Child Outcomes

Type of ECE setting has been related to children's cognitive and social development, with different patterns of associations for infants and toddlers than for preschoolers (Magnuson & Waldfogel, 2008; NICHD ECCRN, 2006). Most often researchers compare center-based settings (of any kind), informal care (sometimes differentiating between family-based daycare and relative care), and parental care. The vast majority of the research has focused on children of preschool age, with somewhat less attention given to infants and toddlers.

A few prominent studies have examined how center care experiences as infants and toddlers predict development. In the SECCYD, children 15 and 24 months old in center care had slightly higher cognitive skills, but slightly lower social skills, compared to children in informal care settings. Similar positive associations of center care during the first 3 years with later cognitive skills have been reported in the United Kingdom (Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2012) and Sweden (Andersson, 1989), and with problem behaviors in the United States among children who had attended centers as infants or toddlers in the ECLS-Kindergarten Cohort (Loeb et al., 2007). A few studies of specialized ECE interventions, for example, Abecedarian, Early Head Start,

and the Infant Health and Development Program, provide clear evidence that center-based care can be advantageous for infants and toddlers (Campbell & Ramey, 1994; Infant Health and Development Program, 1990).

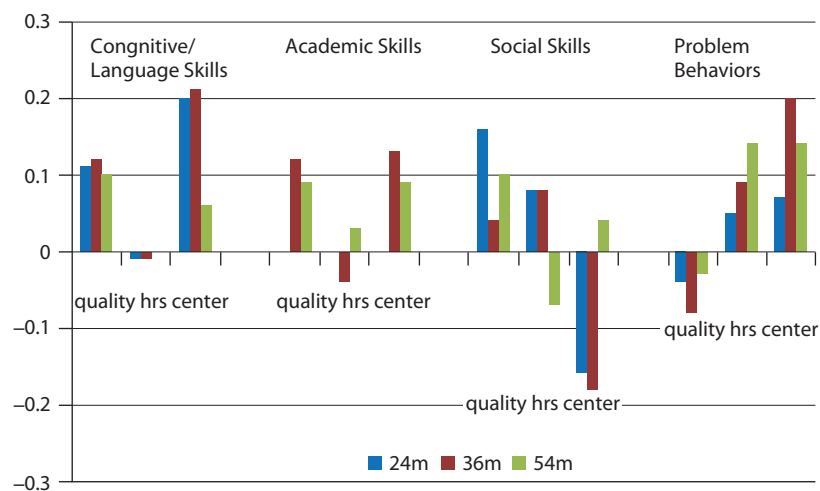
Whether type of care is related to outcomes for preschoolers has been much more extensively studied in the United States and throughout the world. Center-based programs are thought to provide more instruction and opportunities to learn because typically such settings formally incorporate learning into their goals and caregivers provide explicit instruction and/or learning-related activities. A large literature has examined the impact of publicly funded programs, typically center care, and those results are discussed in the final section of public policies. Analyses of the nationally representative Early Childhood Longitudinal Survey–Kindergarten Cohort (ECLS-K) indicated that in the United States children with center care as a preschooler had higher cognitive and language skills (Magnuson, Meyers, Ruhm, & Waldfogel, 2004) and that greater exposure to center care (longer days or more months of center care) predicted higher reading and math scores (Loeb et al., 2007), although the magnitude of the average effect was modest. Entering center care between 2 and 3 years old was related to better outcomes in kindergarten, whereas starting center care at younger ages was negatively related to kindergarten outcomes such as language and social skills (Loeb et al., 2007). These data did not, however, have information about the quality of care that children experienced.

The analyses of the SECCYD (NICHD ECCRN, 2006) that examined type, quality, and quantity of care

simultaneously controlling for child and family characteristics indicated that center care was related to slightly higher language, academic, or memory skills and positive peer interactions at 36 and 54 months, but more behavior problems at 54 months. Figure 1 shows the estimated effect sizes for childcare type, quality, and quantity for 24-, 36-, and 54-month outcomes.

Preschool-center-based ECE has been linked also to enhanced academic and social outcomes in other affluent countries. Studies of the Effective Provision of Preschool Education (EPPE) in the United Kingdom and the Effective Provision of Preschool in Northern Ireland (EPPNI) found that preschool center care was related to stronger academic and social skills at school entry and during the primary school years (EPPE, 2004; Melhuish et al., 2006). Quality of the child's center care was related to language and literacy outcomes in the United Kingdom (EPPE, 2004), Portugal (Pinto et al., 2013), the Netherlands (van Tuijl & Leseman, 2007) as well as in a combined analysis of the Preprimary Project with centers from Europe (Finland, Ireland, Italy, Greece, Poland), the United States, and Asia (Hong Kong, Indonesia, Thailand; Montie, Xiang, & Schweinhart, 2006).

Preschool center-based ECE has been related to improved academic and social outcomes of children in less affluent countries, and is thus often suggested as a way to decrease the gap in schooling in these countries between high- and low-income children (Engle et al., 2011). In Bangladesh (Moore, Akhter, & Aboud, 2008), Cambodia (Rao, Sun, Pearson, et al., 2012), China (Rao, Sun, Zhou, & Zhang, 2012), Kenya, Uganda, and Zanzibar



**Figure 6.1** Effect sizes for ECE quality, quantity, and type from SECCYD.

Source: Adapted from "Child Care Effect Sizes for the NICHD Study of Early Child Care and Youth Development," by the NICHD Early Child Care Research Network, 2006, *American Psychologist*, 61(2), pp. 99–116.

(Mwaura, Sylva, & Malmberg, 2008), Chile (Urzua & Veramendi, 2010), Colombia (Bernal et al., 2009), and Uruguay (Berlinski, Galiani, & Manacorda, 2008), preschoolers attending ECE centers have higher academic outcomes at entry to or during primary school, with effect sizes ranging from modest to large. Reduced problem behaviors among children in preschool centers were also noted in Mauritius (Raine, Mellinger, Liu, Venables, & Mednick, 2003).

Nores and Barnett (2010) conducted a meta-analysis of these and other international studies, and concluded that ECE services, typically preschool center care combined with nutritional services, were related to higher cognitive skills (effect size = .35), behavioral adjustment (effect size = .27), health outcomes (effect size = .23), and schooling outcomes (effect size = .41), with slightly smaller effect sizes for more rigorous studies, longer-term outcomes, and studies conducted in low-income countries. Engle et al. (2011) used these and other data to argue that each increase of 10% in preschool attendance translates into a reduction of .26 grades in the schooling gap between the youths from the wealthiest 25% of the families and the youths from the remaining 75% of the families.

### **ECE Quality and Child Outcomes**

Higher-quality ECE has been linked to higher cognitive and social skills in both experimental and observational data. Evidence from both experimental trials and quasi-experimental studies of large-scale programs shows positive impacts of exposure to high-quality childcare in the preschool years (Pianta et al, 2009; Wong, Cook, Barnett, & Jung, 2008).

#### ***Experimental Studies and Child Outcomes***

The strongest evidence for quality effects on child outcomes is from experimental studies that did not actually measure quality of care. In a meta-analysis focusing on the evaluations of 20 early childhood programs that involved experimental or quasi-experimental designs, Karoly et al. (2005) found evidence of significant effects of center-based ECE on academic and social outcomes in approximately two-thirds of the programs. They also found that more intensive programs (e.g., 20+ hours per week) that focused on improving school readiness produced larger effects than other programs, with effect sizes that were half a standard deviation or larger on cognitive outcomes. It is assumed that these programs were high quality because they were based in research settings. Two of the studies conducted

long-term follow-up studies, reporting small, but meaningful differences in adult outcomes such as increases in income and educational attainment, and reduction in criminal activity (Belfield, Nores, Barnett, & Schweinhart, 2006; Campbell et al., 2012). Evidence from these studies and evaluations of programs like Head Start (see the section on U.S. public policy) suggest that early ECE may have its long-term effects through impacts on skills like executive functioning and social adjustment rather than through impacts on language and academic skills (Blair & Raver, 2012).

#### ***Process Quality and Child Outcomes***

Many large multisite and small local observational studies have examined the association between childcare quality and child outcomes, using a variety of measures of quality and child outcomes. Typically these studies find modest associations between preschool childcare quality and language, academic, and social outcomes using the ITERS for infants and toddlers (Burchinal, Roberts, et al., 2000) and ECERS for preschoolers (Howes et al., 2008; Montes, Hightower, Brugger, & Moustafa, 2005; Votruba-Drzal, Coley, & Chase-Lansdale, 2004). Similarly, childcare quality, as measured using the ORCE in the large multisite NICHD SECCYD, was associated modestly with concurrent language and academic skills for infants and toddlers (NICHD ECCRN, 2000a) and preschoolers (NICHD ECCRN & Duncan, 2003). As shown in Figure 6.1, the analyses of the SECCYD that included quality, quantity, and type of care while controlling for child and family characteristics indicated, compared to children in low-quality care, children in high-quality care had slightly higher cognitive, language, or academic skills at 24, 36, and 54 months, higher ratings of social skills and fewer problem behaviors at 24 and 54 months, and fewer negative interactions with friends and peers at 54 months. This positive effect of quality for at least some outcomes was still observed when children were in high school (Vandell et al., 2010). Likewise, modest associations between the CLASS and child outcomes have been found, with some evidence of differential prediction; CLASS Emotional Support is modestly related to gains in social skills, whereas CLASS Instructional Support is modestly related to gains in academic and language skills in the NCEDL pre-K study (e.g., Mashburn et al., 2008).

Guided by attachment theory, some research has specifically defined ECE quality in terms of the quality of the relationship between the caregiver and child, and on the caregiver as an attachment figure for the infant. The quality of the relationship between the child and their caregiver in

prekindergarten programs predicts later peer competence through the second grade, and at-risk children with secure attachment relationships with their caregivers were rated by their teachers as more socially competent with peers and having fewer problem behaviors than those with insecure attachment relationships (Howes & Ritchie, 1999; Howes, 2000). High-quality care might be especially beneficial for infants who are insecurely attached with their parents, by providing them with the opportunity to develop a secure attachment with the ECE caregiver (Howes, Rodning, Galluzzo, & Myers, 1988).

Specific aspects of ECE quality appear to enhance children's early development. Children have demonstrated larger gains in academic and social skills when they experience frequent, warm, and responsive interactions between caregivers and children (Mashburn et al., 2008; Raver et al., 2011). Gains in academic skills have also been enhanced when interactions with caregivers involve instructional support such as detailed feedback and sequenced and elaborated support for learning (Howes et al., 2008; Mashburn et al., 2008). In addition, larger gains in language and academic skills were observed when childcare providers encouraged children to talk, with interactions involving multiple turns in which the provider and child discuss and elaborate on a given topic (Justice, Mashburn, Pence, & Wiggins, 2008; Wasik, Bond, & Hindman, 2006). Both the warm and responsive interaction style and elaborated conversations also predict the persistence of gains into the school years (Dickinson & Porche, 2011; Vandell et al., 2010). Finally, some evidence suggests that preschool-age children who are given more opportunities to engage in age-appropriate activities with a range of varied materials such as books, blocks, water, and sand demonstrate larger language and social gains than those who have fewer opportunities, and that these gains persist into the school years (Peisner-Feinberg et al., 2001; Sylva et al., 2012).

ECE quality is associated with child outcomes throughout the world. Recent studies find that higher-quality care predicts better child outcomes in low-income and middle-income countries such as Bangladesh (Aboud & Hossain, 2011; Moore et al., 2008; Opel, Ameer, & Aboud, 2009), Kenya, Uganda, and Zanzibar (Malmberg et al., 2011), China (Rao, Sun, Zhou, et al., 2012), Jamaica (Baker-Henningham, Walker, Powell, & Gardner, 2009), and Costa Rica (Rolla, Arias, Villers, & Snow, 2006), and in high-income countries such as the United Kingdom (EPPE, 2004), the Netherlands (van Tuijl & Leseman, 2007), Germany (Tietze et al., 1996), and Australia (Harrison & Ungerer, 2005). Some research projects

involved studying structural quality measures such as ratios (Moore et al., 2008) or the introduction of evidence-based curricula to improve behavior (Baker-Henningham et al., 2009), language and literacy (Opel et al., 2009), whereas other studies compared programs that differed in terms of observed quality, typically using the ECERS (Aboud & Hossain, 2011; EPPE, 2004; Harrison & Ungerer, 2005; Tietze et al., 1996) but also observed classroom interactions (Rolla et al., 2006).

During the past decade, several meta-analyses of observational studies (Burchinal, Kainz, et al., 2011; Keys et al., 2013) have found consistent, but only modest, linear associations between quality and child outcomes (i.e., that as quality increases, child outcomes improve commensurately). As discussed below, much larger effect sizes have been observed when different types of programs or curricula have been compared, but the association between observed quality and child outcomes tends to be quite modest in recent studies. To examine this issue, Burchinal, Kainz, et al. (2011) conducted both a meta-analysis and coordinated secondary analyses with data from five large ECE studies. As expected, in the meta-analysis the magnitude of the effects was modest, with partial correlations ranging from .05 to .17. Stronger associations were found for language outcomes than for those related to social and emotional development across all ages, and stronger associations were also found for 2- to 3-year-olds compared to 4-year-olds. Related analyses were conducted with several large samples of low-income children in ECE programs and measures of specific dimensions of quality were more strongly associated with child outcomes compared with global quality measures. Similarly, Keys et al. (2013) conducted a meta-analysis of findings from parallel analyses across five large childcare studies, and found only very modest associations between childcare quality and child outcomes (i.e.,  $r_p = .04$ ). These comparisons—between the results from this meta-analysis of the association between childcare quality and child outcomes, and the meta-analysis of the impacts of experiments designed to study the effectiveness of high-quality programs—raise important questions and suggest that existing measures of quality may need more work, especially psychometric development (Burchinal, Kainz, et al., 2011; Gordon, Fujimoto, Kaestner, Korenman, & Abner, 2013).

Thresholds in the associations between childcare quality and child outcomes in early childhood have been offered as one possible explanation for the modest associations reported to date. It is hypothesized that ECE quality must reach some minimal level before it can affect children's



development. If true, then higher-quality ECE would translate into more learning only in programs above this threshold. Some, but not consistent, evidence supports this hypothesis. Burchinal and colleagues (Burchinal et al., 2009; Burchinal, Xue, Tien, Auger, & Mashburn, 2011) found evidence of a curvilinear relation between ECE quality and child outcomes in secondary data analyses of four large ECE studies. Other evidence emerged from piecewise or spline regressions, which suggested that gains in academic outcomes were more-strongly related to ECE measures of instructional quality in moderate- to high-quality classrooms than in the low-quality classrooms (Burchinal, Xue, et al., 2011; Burchinal, Vandergrift, Pianta, & Mashburn, 2010). Two follow-up studies failed to replicate this finding, but indicated higher-quality care was related to larger gains in executive functioning skills in higher, but not lower, quality classrooms (Burchinal, Vernon-Feagans, Vitiello, Greenberg, & Family Life Project Key Investigators, 2013; Weiland & Yoshikawa, 2013). Finally, recent analyses involving a nonparametric spline approach that estimated cut-points and slopes and piecewise regressions suggested that social-emotional development of infants, toddlers, and preschoolers was enhanced only in moderate- to high-quality childcare settings (Torquati, Raikes, Welch, Ryoo, & Tu, 2011).

Differential susceptibility to ECE experiences has also been offered as an explanation for the modest association between ECE quality and child outcomes. Belsky and Pluess theorized that some personality characteristics may increase the likelihood that children are affected by the quality of their interactions with parents and caregivers (Belsky, 2005; Pluess & Belsky, 2010). In particular, adult scaffolded interactions may have a larger impact on children who tend to be inhibited or highly reactive and negative than on the child with the more average and positive temperament. Evidence in terms of temperament x quality interactions supports this contention in analyses of the SECCYD (Pluess & Belsky, 2010) and the Infant Health and Development Project (Blair, 2002).

### *Structural Quality and Child Outcomes*

ECE quality is also measured by indicators of structural quality. Many studies have examined the extent to which the child-to-adult ratio and caregiver education and training predict quality of childcare and children's outcomes. Ratio has been the most consistent predictor, showing positive and significant associations with observed quality and child outcomes (NICHD ECCRN, 1999, 2002a; Phillipsen et al., 1997). Children's language and social competence were

higher when their ECE settings met the APA and NAEYC recommendations regarding child-to-adult ratios (NICHD ECCRN, 1999). Similarly, a meta-analysis indicated that children showed higher skills levels when caregivers had sufficiently intense training and when that training was aligned with a rigorous curriculum (Fukkink & Lont, 2007). By contrast, teacher education has been an inconsistent predictor. Neither educational degree nor whether the teacher was certified to teach predicted classroom quality or child outcomes in analyses of seven large childcare studies (Early et al., 2007).

Caregiver and program characteristics show a mixed pattern of association with ECE quality. Caregiver beliefs and knowledge tend to be among the strongest predictors of observed quality, with caregivers who believe in authoritative, not authoritarian, child-rearing styles showing more responsive and sensitive care (NICHD ECCRN, 2000a; Phillipsen et al., 1997; Pianta et al., 2005). The mental health of the caregivers has been related to the quality of their interactions with children, with higher levels of depressive symptoms predicting less frequent and harsher interactions in home-based setting (Hamre & Pianta, 2004). Caregiver mental health, however, was not related to observed quality in several studies, including the SECCYD & NCEDL pre-K study (Clarke-Stewart, Vandell, Burchinal, O'Brien, & McCartney, 2002; Pianta et al., 2005). Directors with more experience and those who use a more equalitarian leadership style also tend to oversee preschool classrooms with higher quality (Phillipsen et al., 1997). Caregiver wage and benefits show a mixed pattern of association with quality and child outcomes (Phillipsen et al., 1997; Pianta et al., 2005), with early work suggesting higher-quality ECE correlates with higher wages (Phillipsen et al., 1997) but more recent work suggesting lower-quality care and smaller effects on child outcomes when wages were higher in prekindergarten programs (Pianta et al., 2005).

### **Childcare Quantity and Child Outcomes**

Perhaps one of the most contentious issues during the past 10 years has been whether and to what extent higher quantities of ECE are related to lower levels of socioemotional well-being, specifically increased levels of insecure infant-mother attachments and problem behaviors and decreased levels of social skills. Theoretically, longer hours in ECE starting at a younger age, as well as frequent changes in childcare settings or caregivers were hypothesized to increase the likelihood of insecure infant-mother

attachments and of problem behaviors. The argument is both that time away from parents disrupts the ability of parental caregivers to develop warm affective relationships with their children, and that nonparental caregivers are less likely to provide emotionally nurturing care than parents.

Concern about nonmaternal care leading to insecure attachments fueled much of the early research on ECE. Very early studies suggested that children in ECE settings did not differ from other children with respect to attachment behaviors. However, a handful of studies found that ECE was linked to insecure attachment classification, but the studies tended to ignore family characteristics that are known to be confounded with both attachment and use of ECE (McCartney & Galanopoulos, 1988). This issue was addressed when the NICHD SECCYD reported that nonmaternal care was not associated with attachment security and there was only very limited evidence that the amount of ECE was related to attachment security (NICHD ECCRN, 2001). The only association between childcare experiences and infant attachment came from one of many interactions tested and suggested that children with more hours of care and less sensitive mothers were the most likely to show insecure attachments (NICHD ECCRN, 2001).

### *ECE Quantity and Problem Behaviors*

Quantity of childcare is also thought to relate to more general problem behaviors. Early research provided some evidence that full-time childcare beginning during infancy was related to more problem behaviors (Haskins, 1988; Vandell & Corasaniti, 1988). Analyses of the NICHD SECCYD suggested that at 24 and 54 months children were rated by caregivers as showing more problem behaviors if they experienced longer hours of childcare even with family characteristics and type and quality of childcare held constant (NICHD ECCRN 1998, 2003a). Childcare hours continued to predict the child outcomes through high school, showing significant modest associations with self-reports of risk taking and impulsivity during high school (Belsky et al., 2007; Vandell et al., 2010). Further work to disentangle age, type of care, and quantity effects using econometric approaches with a nationally representative sample indicated that both full-time care and center care predicted more behavior problems and lower levels of learning behaviors (e.g., task orientation and attention), especially if the child had experienced longer hours of childcare as an infant and toddler (Coley, Votruba-Drzal, Miller, & Koury, 2013). Similar patterns of associations between hours of childcare and problem behaviors were reported in other studies conducted in

the United Kingdom (Neighbourhood Nurseries Initiative Research Team, 2007), Canada (Côté, Borge, Geoffroy, Rutter, & Tremblay, 2008), and the United States (Loeb et al., 2007).

This association between childcare quantity and problem behaviors has been carefully examined in several ways. Findings from those studies suggest several caveats to the general conclusions that more hours of ECE leads to higher levels of problem behaviors. First, one study finds that longer hours of care are related to fewer, not more, problem behaviors for young low-income children (Votruba-Drzal et al., 2004). Second, evidence suggested that the finding is driven specifically by group care experiences, in terms of hours of center-based care during infancy or exposure to large numbers of same-age peers appeared to account for the negative effect (Loeb et al., 2007; McCartney et al., 2010). Third, an analysis of the NICHD SECCYD data found the average hours per day of nonparental care, not the number of days of care overall, accounted for associations between time in care and problem behaviors (McCartney et al., 2010). Fourth, McCartney et al. (2010) found the quantity-problem behavior associations were not statistically significant when they applied statistical methods that more rigorously address potential bias related to family and other potential selection factors. Similar results emerged in analyses of two birth cohorts in Norway (Solheim, Wichstrøm, Belsky, & Berg-Nielsen, 2013; Zachrisson, Dearing, Lekhal, & Toppelberg, 2013).

One pathway that some have argued accounts for associations between childcare quantity and children's problem behaviors is children's stress reactivity. The development of the stress response system is quite sensitive to early experiences. Based on an epigenetic framework (Gottlieb, 2007), low-quality caregiving by primary caregivers directly affects children's skills and indirectly does so by altering the gene expression in stress hormones. This, in turn, can change connectivity in the brain that can also impact the development of self-regulation (Blair & Raver, 2012). This epigenetic model has been applied to childcare, with some arguing that chronic stress of being in group care with multiple peers can alter children's stress responses. Children who spent more time in group care with multiple peers demonstrated higher cortisol levels than did children in exclusive parental care (Vermeer & van IJzendoorn, 2006). The children in childcare were more likely to show differences in the circadian patterns in which already elevated cortisol levels increase, rather than decrease, from the morning to the afternoon among children in

group care. Additionally, infants and toddlers showed the largest increases in cortisol levels when compared to their peers at home and older preschool peers in group care across several studies (Ahnert et al., 2004; Watamura, Kryzer, & Robertson, 2009). These atypical patterns in the cortisol levels of young children in ECE have been related to lower quality care (Watamura et al., 2009), large groups (>15 children even with 1:4 ratios; Legendre, 2003), insecure attachments with their caregiver (Badanes, Dmitrieva, & Watamura, 2012), and the temperamental disposition of the child and caregiver (Groenvelde, Vermeer, van IJzendoorn, & Linting, 2010; Pluess & Belsky, 2010). Groenvelde and colleagues reported that fearful children had better outcomes when paired with caregivers with decreased cortisol levels.

### ***ECE Quantity and Academic Skills***

A small body of research has examined whether more time in childcare is related to academic skills, and the evidence is mixed, suggesting that more nonparental care is not especially beneficial or harmful for academic skills. But a more careful look at particular types of care or ECE dimensions shows some interesting findings. Evidence suggests that more than 1 year of preschool, especially center-based preschool, is related to larger gains in academic skills, but that the added value of the second year is less than that of the first year (Arteaga, Humpage, Reynolds, & Temple, 2014; Magnuson et al., 2004), perhaps because many programs combine 3 and 4 years and thus children with 2 years often experience the same curriculum in each year rather than sequenced 2-year curricula. Other evidence indicates that children's language and academic skills are enhanced when they experience high-quality childcare in both the infancy/toddler years and the preschool years (Li, Farkas, Duncan, Burchinal, & Vandell, 2013).

### ***Number of Arrangements and Problem Behaviors***

The number of childcare arrangements is also associated with child outcomes, specifically problem behaviors. Based on attachment theory, some argue that very young children will have trouble trusting that caregivers respond sensitively and positively if they experience either instability in care settings over time or multiple care arrangements at the same time. Moreover, the young child who does not form positive, trusting relationships with their caregiver is thought to be at increased risk for manifesting problem behaviors. Somewhat higher levels of problem behaviors were reported among children with frequent changes in caregivers in the United States (Loeb, Fuller, Kagan, &

Carrol, 2004; NICHD ECCRN, 1998; Youngblade, 2003) and Australia (Neilsen-Hewett et al., in press). Multiple concurrent care arrangements are also associated with somewhat higher levels of problem behaviors in the United States (Morrissey, 2009) and the Netherlands (De Schipper, Tavecchio, van IJzendoorn, & Linting, 2003). There is some, but not consistently replicated, evidence that multiple care arrangements may be more predictive of problem behavior for infants with difficult temperaments (De Schipper, Tavecchio, van IJzendoorn, & Van Zeijl, 2004), girls, and younger children (Morrissey, 2009).

Studies linking child outcomes to caregiver continuity find that young children seem to show immediate, but not long-term, reactions to a change in caregivers. Cryer et al. (2005) examined this issue in childcare centers that served infants using quasi-experimental and experimental approaches. They found that teacher turnover due to factors such as pregnancy and mobility made it very difficult to maintain continuity. Furthermore, children showed increased behavioral issues during the transition periods, but these issues resolved within 4 weeks, and there was no evidence of long-term impact on cognitive, social, or behavioral outcomes.

### ***Peers and Child Outcomes***

Parents and policy makers want ECE to promote school readiness skills through teaching children to interact positively with both caregivers and peers in school-like settings (see Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*, this volume). However, there is some evidence that the influence of peers is variable dependent on structural and process features of the group care setting (McCartney et al., 2010). For example, the association between the number of hours in group care and an increase in problem behaviors is stronger for children who spent more hours in large groups of peers and in lower-quality care settings (McCartney et al., 2010). Additionally, the composition of peers in classroom settings seems to have an independent influence on children's acquisition of cognitive skills with higher-skilled peers having a positive influence on other children in the group (Henry & Rickman, 2007; Justice, Petscher, Schatschneider, & Mashburn, 2011), especially when classrooms were well managed (Mashburn, Justice, Downer, & Pianta, 2009). In both studies, children showed larger gains in receptive and expressive vocabulary when their peers had higher entry levels of language. These studies suggest that composition of the class, along with quality of the teaching, may be important in early childhood.

### **Childcare and Gender, Family Income, and Ethnic Diversity**

The general systems models that guide much of the childcare research posit that the impact of young children's context, including childcare, on early development will vary depending on individual child and family factors such as gender and the family's income and ethnicity. These three factors have been examined in many studies.

#### ***ECE and Gender***

The extent to which ECE affects boys and girls differently has been examined motivated by clear gender differences in early development. Evaluations of some early intervention programs, such as the Abecedarian Study or High Scope/Perry Preschool, found larger impacts on educational achievement for females (M. Anderson, 2008), but found larger impacts on other outcomes such as social adjustment for males (Duncan & Magnuson, 2013). Some evidence suggests that quantity of nonparental care or quality indices such as child-to-caregiver ratios are more strongly related to social outcomes such as problem behaviors for boys than for girls (Bornstein, Gist, Hahn, Haynes, & Voigt, 2001; Bornstein & Hahn, 2007; Youngblade, 2003). On the other hand, most large childcare studies have not found gender differences in associations between ECE type, quality, and quantity and children's cognitive development (Howes et al., 2008; NICHD ECCRN, 2000b; Peisner-Feinberg & Burchinal, 1997).

#### ***ECE as Protective Factor for Low-Income Children***

It is widely assumed that ECE is one of the most effective intervention approaches to improving the achievement of low-income children in the United States and throughout the world (Engle et al., 2011; Heckman, 2010). ECE during infancy has been related to better cognitive skills and lower levels of physical aggression among children with low-income parents or parents with low levels of education (Côté et al., 2008, 2013; Geoffroy et al., 2007; Votruba-Drzal et al., 2004). In particular, preschool and center care, especially with enrichment programs or programs using effective curricula, are especially beneficial for low-income children (Pianta et al., 2009). The evidence, however, ranges in terms of the degree to which selection bias issues are addressed and whether the estimated benefits are significantly larger for disadvantaged children compared to more affluent children.

Historically, disadvantaged children have had different ECE experiences than their more affluent peers.

Specifically, low-income children have been persistently less likely to attend center-based care than other children (Bainbridge, Meyers, Tanaka, & Waldfogel, 2005). This lower attendance is worrisome given that participating in preschool or prekindergarten programs seems to have larger beneficial effects for children from low-income families compared with other children. In the United States, children with more center care as preschoolers had higher cognitive and language skills than all children, but more preschool center care had a stronger impact for low-income children (Loeb et al., 2007; Magnuson et al., 2004; Votruba-Drzal, Coley, Koury, & Miller, 2013). Using econometric approaches to reduce selection biases, results suggest that children from low-income families showed larger gains associated with preschool center experiences, although such differences were not always significant. Similar findings are reported for Canada (Geoffroy et al., 2007), the United Kingdom (Côté et al., 2013), and Germany and the Netherlands (Burger, 2010).

Children from lower-resourced home environments may also be buffered against poorer cognitive, language, and social outcomes by the provision of high-quality ECE (Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000; Magnuson et al., 2004; NICHD ECCRN, 2005b). McCartney and colleagues examined whether observed ECE quality might benefit low-income children more than other children in predicting a variety of language and academic outcomes. In predicting school readiness and language skills and academic skills in elementary school, high-quality childcare was shown to buffer children from the negative effects of poverty in the SECCYD (McCartney, Dearing, Taylor, & Bub, 2007; Dearing, McCartney, & Taylor, 2009) and of exposure to more social risk in a smaller study of African American children (Burchinal, Roberts, et al., 2000; Burchinal, Roberts, Zeisel, Hennon, & Hooper, 2006). However, other large childcare studies have failed to document larger impacts of quality for low-income children (Howes et al., 2008; NICHD ECCRN & Duncan, 2003) so further work is needed to determine whether, and under what circumstances, ECE serves as a protective factor for low-income children.

#### ***ECE Experiences and Ethnicity and Home Language***

The increasing diversity of children in the United States in terms of ethnicity and home language (see Ganong, Coleman, & Russell, Chapter 4 and McBride Murray, Hill, Witherspoon, Berkel, & Bartz, Chapter 11, this *Handbook*, this volume), especially the increase in Latino/a American and Latino/a immigrant populations, has increased the



importance of understanding ethnic differences in patterns of ECE use as well as ECE effects. Ethnicity is related to whether the family uses ECE and if so, the number of hours per week spent in ECE. Compared to European American children at all ages, African American children were more likely and Latino/a American children were least likely to be enrolled in center care according to the Current Population Survey, 1968–2000 (Magnuson & Waldfogel, 2005). Lower rates of use by Latino/a American families have been explained by cultural factors and problems with access (Hernandez, Takanishi, & Marotz, 2009). In contrast to ethnic differences in ECE use, both African American and Latino/a American children in ECE spent more hours per week in center care during the year before kindergarten than European American children in ECE (Magnuson & Waldfogel, 2005).

Of particular interest to the field is the development of dual language learners (DLLs) and how they are affected by ECE experiences. DLL children, particularly children from Latino/a American, Spanish-speaking households or those living in linguistically isolated households (e.g., those households where no one over the age of 14 speaks English very well) tended to enroll in childcare centers and preschools at lower rates than native English-speaking children (Chernoff, Flannagan, McPhee, & Park, 2007; Iruka & Carver, 2006). Analysis of the ECLS-B (Espinosa et al., in review) also yielded large differences in ECE experiences between DLL and English-only families, but those differences were accounted for by large differences between DLL and English-only families in family demographics, country or region of origin, and maternal immigration generation. These findings suggest that these factors, rather than home language, might account for differences in ECE experiences related to DLL status.

Other studies have focused specifically on immigration status and country or region of origin. Data from the ECLS-K suggest that nearly 30% of children of immigrants experience no nonparental care in the year before entering kindergarten compared with only 18% of children of native parents (Magnuson, Lahaie, & Waldfogel, 2006). Analysis of the more recent ECLS-B data yields similar patterns with Latino/a American and Asian American children of foreign-born parents experiencing lower rates of center-based care prior to entering kindergarten than native-born children (Turney & Kao, 2009). Focusing on the specific country of origin, children whose mothers immigrated to the United States, especially from Mexico, were found to be the least likely to enroll in childcare centers (Crosnoe, 2007).

A recent literature review examined whether the measurement of ECE quality varies depending on the child's home language (Coley et al., 2013). The ECERS and CLASS have been examined in several studies, and evidence suggests that both instruments show similar psychometric properties and associations with child outcomes for children from English-only families and from DLL families for ECERS, ORCE, and CLASS. In general, these studies suggest that the classrooms may be taught in a language other than English with DLL children and should have books and activities relevant for the cultural backgrounds of the children, but the types of interactions that encourage children's academic, cognitive, and social development are similar regardless of the child's home language. Furthermore, children from diverse backgrounds may need additional supports for early learning, especially DLL children.

Developmentally appropriate practices involve providing young DLLs with education and care in their home language (NAEYC, 2009). This is recommended to provide DLL children with continuity between home and school and to ensure that they learn their first language with sufficient depth to provide a deep understanding for subsequent learning. A review of the research literature (Peisner-Feinberg et al., 2014) indicated that young Spanish-speaking DLLs tended to show substantial gains on English outcomes when instruction was in both Spanish and English in about half of the studies. These findings suggest that further research on the role of the home language in childcare may be warranted to ensure policies are promoting both short- and long-term outcomes for DLL children, especially DLL children from very low-income families.

Despite their potentially lower enrollment, children of immigrants and DLL children especially benefit from center-based care or high-quality care (Gormley, 2008; Magnuson et al., 2007). Some recent evidence suggests children of immigrants showed larger gains in academic skills when in center care than did children from native-born families in analyses of the ECLS-B (Votruba-Drzal, Levine-Coley, Collins, & Miller, in review). The gains for immigrants varied by home language, with children in English-speaking immigrant households gaining more in reading skills and children in DLL families gaining more in terms of expressive language. Similarly, evaluations of the Oklahoma Universal Pre-Kindergarten Program on Latino/a American children's early literacy and mathematical abilities reported that Latino/a American children who spoke English at home made positive, but statistically

insignificant cognitive gains, but Latino/a American children who spoke Spanish at home made large and significant gains in prereading and premath when assessed in English (Gormley, 2008; Gormley, Gayler, Phillips, & Dawson, 2005). Furthermore, there were differential effects of the program depending on when the family immigrated; Latino/a American children whose parents were born in Mexico made the largest gains in prereading, prewriting, and premath, whereas Latino/a American children with parents born in the United States made significant gains only in prewriting. The children from Spanish-speaking homes did not lose skills in Spanish while gaining skills in English, but the gains in Spanish were not as large nor were they statistically significant.

### Summary

Whether and how ECE influences early cognitive and social development has been the focus of much research. Because of the difficulty of isolating the effects of ECE from family characteristics that might affect ECE selection, studies have had to become increasingly rigorous methodologically. More rigorous studies suggest that children show modest gains in language and academic skills when they attend center care as preschoolers or attend higher-quality care compared with children not attending center care or attending lower quality care. These gains are maintained into adolescence and adulthood in at least some studies, with some evidence that long-term gains may be through impacts on “noncognitive” skills.

The modest ECE effects have been examined to determine whether thresholds in quality-outcome associations or differential effects related to child gender or temperament and family income might reveal stronger associations for subgroups of children. Center care and higher-quality ECE may be more strongly related to language and academic outcomes for DLL children or children from low-income families than from middle-income families. For middle-income children but not for low-income families, long hours of ECE, especially in settings like centers with many same-age peers, may be related to modest increases in problem behaviors. In addition, entry into ECE during the first few months of life might be related to modestly lower levels of cognitive skills for middle-income European American children, but not for low-income or African American children. Consistent with epigenetic hypotheses, evidence suggests that children with more difficult temperaments might show larger effects of ECE quality than do other children. Finally, there is some, albeit

inconsistent, evidence that ECE quality may need to be in the moderate to high range for children to show larger gains academically when they experience higher-quality care. Careful design and analysis is necessary in future research to examine these important questions about differential effects of ECE experiences.

## STRATEGIES TO ENSURE QUALITY AND ACCESS

ECE is increasingly viewed as the most cost-effective and successful means to improve educational opportunities for low-income children (e.g., Heckman, 2010), which has led to interest in practices and policies that ensure access to and quality of ECE. The evaluations of many programs to improve quality and child outcomes have found that not all programs result in positive outcomes. Why some programs work better than others is not always clear. First, issues of implementation loom large because complex interventions may be hard to implement in ECE settings in which the workforce often receives low pay and has relatively low levels of education and training. Another issue is that some interventions focus on improving aspects of quality that are only modestly related to child outcomes (Pianta et al., 2009). There have been, however, notable successes linked to two relevant initiatives. First, funding from federal research agencies increased for projects designed to improve the quality of instruction, especially in ECE. As a result, researchers have examined many curricula and a growing number of professional development strategies. Early childhood curricula with the strongest scientific evidence of positive effects on children’s outcomes are described in detail in the What Works Clearinghouse website ([www.whatworks.ed.gov](http://www.whatworks.ed.gov)) established by the Institute for Education Sciences (IES). Research on effects of various curricula and professional development efforts is described below. Second, state and federal policies have sought to improve ECE quality and accessibility through funding ECE programs, quality rating and improvement systems, licensing, and childcare subsidies. These initiatives are also discussed below.

### The Role of ECE Curricula and Professional Development to Improve ECE Quality

Concerns of ECE quality increased attention on curricula as a means to ensure that young children in ECE are provided with opportunities to acquire academic and

social skills. In this section we also examine how professional development can affect the quality of ECE.

### *ECE Curricula*

Since the late 1980s, early childhood curricula have been guided by the concept of developmentally appropriate practice as conceptualized by the largest association of early childhood professionals, the NAEYC. The concept emphasizes intentional instruction—both for young children in ECE and for their providers. Early education, like later education, is believed to be enhanced when skills are taught in a focused and sequential manner (Epstein, 2007). Sequence is thought to be important when it is believed that skills are acquired sequentially in a given content area, such as language and literacy, mathematics, or socioemotional skills—following a developmental progression in which basic skills provide the foundation for learning more complex skills. Focused scope is important because the acquisition of skills within a content area requires intensive and specific, rather than diffuse, instructional approaches. Ideally, children's progress is monitored and instruction is adapted to match the child's skills. NAEYC views developmentally appropriate practice in ECE as including effective curricula that are aligned, and ideally integrated, with progress monitoring and professional development (NAEYC, 2009). Ideally, the caregiver is trained in the curriculum and is receiving ongoing mentoring to ensure she or he is successfully implementing it. Curriculum selection is to be guided by evidence that it is successful in a rigorous evaluation, ideally involving randomized clinical trials with children similar to those in the classroom. The caregiver conducts formative assessments on each child, and then adapts instruction for that child or group of children depending on the results of those assessments. A meta-analysis and some of these individual programs and policies are described below to illustrate this line of research designed to improve ECE quality and the school-readiness skills of young children.

Two meta-analyses of experimental and quasi-experimental studies examined which specific aspects of programs and care settings improve outcomes for children. Camilli, Vargas, Ryan, and Barnett (2010) undertook such an analysis of 120 ECE programs spanning four decades (1960–2000). They reported small to moderate positive effects of ECE on children's cognitive, school, and social outcomes. Results indicated that use of curriculum, instructional focus, and pedagogical approach were modest predictors of children's outcomes. More recently, this database was updated and refined as part of a project

undertaken by Duncan and colleagues (see Duncan et al., 2011). Including studies conducted through 2007, initial findings indicate that the average effect size for ECE on cognitive and academic achievement scores was about .28, but there was considerable heterogeneity across programs in their effectiveness (Duncan & Magnuson, 2013).

One of the first large evaluations of curricula was conducted by the Preschool Curriculum Evaluation Research (PCER) initiative. The impact of 14 different curricula implemented in early childhood classrooms serving primarily low-income children was assessed (Preschool Curriculum Evaluation Research Consortium, 2008). In each of 12 different projects, early childhood classrooms or centers were randomly assigned to a target curriculum or to a control condition, typically the local business-as-usual curriculum. The 14 target curricula included some widely used resources (e.g., Creative Curriculum), several curriculum combinations, and curricula developed by project investigators (e.g., Curiosity Corner by the Success for All Foundation, Inc.). Each of 12 projects was evaluated, but statistical power for analyzing curricula effects in the PCER initiative was limited by relatively small numbers of randomly assigned units (typically centers) in each project. During the pre-K year, 8 of the 14 curricula had a positive impact on teacher instruction, and 2 had statistically significantly positive effects on child outcomes (effect sizes of .32 to .96). Both curricula were focused on teaching specific content areas. The Developmental Learning Materials (DLM) literacy curriculum had positive impacts on reading skills, phonological awareness, and language outcomes and the Pre-K Mathematics curriculum had a positive impact on math outcomes. In addition, curricula focused on teaching specific language and literacy skills had positive impacts on kindergarten outcomes—Curiosity Corner on reading and Early Literacy and Learning Model on language—but a more global curriculum, Project Approach, had a negative impact on behavior in kindergarten. In general, this study demonstrated that studies in which treatments are assigned at the center level must include sufficient numbers of centers to have power to detect modest to moderate effects, focusing attention on the content of pre-K curricula in promoting early learning.

Following the PCER, some of the innovations in curriculum development and evaluation focused on a specific domain of development and learning. The Chicago School Readiness Project (CSRP) is illustrative (Raver et al., 2011). Focused on the development of children's self-regulation, Raver and colleagues hypothesized that

increased attention and self-regulation would lead to gains in children's academic outcomes. Teachers trained in how to provide regulatory support and better classroom management who were provided with mental health expert consultations focused on classroom management and teacher stress reduction. In a randomized clinical trial (RCT), CSRP was compared with business-as-usual classrooms. Children in the CSRP classrooms showed larger gains in self-regulation skills (attention/impulse control and executive function) and in pre-academic skills (receptive vocabulary, letter naming, and early math) from fall to spring of the Head Start year than did children in the control classrooms. Effect sizes ranged from .37 to .63. Results provided partial support for the hypothesis that children's self-regulation skills mediated gains in academic readiness as measured by vocabulary, letter naming, and math skills.

The Building Blocks math program is also illustrative of recent early childhood curriculum work focused on a specific developmental domain. Developed by Clements and Sarama (2004), the curriculum includes large- and small-group instruction focused on teaching math skills in a focused and sequential manner and hands-on and computer activities that promote children's active involvement in solving problems and explaining their solutions. An experimental study reported that the Building Blocks curriculum significantly increased children's math knowledge when compared with a different math curriculum (effect size of .47) and a business-as-usual control group (effect size of 1.07) (Clements & Sarama, 2008).

In addition to curricula that focus on a specific domain, there has been the development of innovative early childhood programs that explicitly address multiple developmental domains (e.g., early literacy competence, social skills), sometimes by using several evidence-based curricula. This research often involves combinations of curricula to promote development in different domains. Three illustrations of rigorous research on innovative, multiple-domain curricula are the Evidence-based Program for Integrated Curricula (EPIC; Fantuzzo, Gadsden, & McDermott, 2003), Head Start's Research-Based, Developmentally Informed program (REDI; Bierman et al., 2008), and the Boston Pre-Kindergarten Program (Weiland & Yoshikawa, 2013). The first two were implemented as RCTs in Head Start classrooms, and the last as an RD in a pre-K classroom. EPIC and Boston Pre-K were designed as comprehensive stand-alone curricula, whereas REDI provided manualized resources to enrich and complement a classroom's existing curriculum.

The EPIC program was designed to improve children's math, language, and literacy skills through routine classroom experiences. EPIC included interactive reading, large- and small-group activities, transition activities, and environmental supports (e.g., props and visual cues that reinforce key vocabulary) plus weekly home-learning activities that reinforced classroom experiences. Teachers conducted brief curriculum-based assessments to help monitor children's progress and inform instruction. Professional development was provided to teachers through a learning community approach (Fantuzzo, Gadsden, & McDermott, 2011). (See section "Other Community-Based Initiatives" further on.) The EPIC classrooms were compared to a control group that received the DML Early Childhood Express Curriculum, a curriculum with positive effects on reading skills in the PCER study. Children in EPIC classrooms performed better than children in control classrooms on math and listening comprehension skills, but were not different on vocabulary and alphabet knowledge skills (Fantuzzo et al., 2011).

The REDI program targeted children's language, literacy, and socioemotional skills as key components of school readiness. The language and literacy content was based on Wasik and Bond's (2001) adaptation of the dialogic reading program that combined reading books aloud with scripted interactive questions and targeted vocabulary words with phonological awareness activities and games (Adams, Treiman, & Presley, 1998). The socioemotional content was based on the Preschool PATHS curriculum (Domitrovich, Greenberg, Kusche, & Cortes, 1999) with lessons focused on prosocial friendship skills, including interpersonal negotiation and conflict resolution. Teachers were provided with training and mentoring focused on implementing and integrating REDI enrichment resources into their base curriculum, and parents received complementary activities to use at home. Comparisons with control classrooms indicated the REDI group had larger gains (effect sizes of .15 to .39) on vocabulary, literacy (blending and elision), and social-emotional skills (emotional understanding, social problem solving, social behavior, and learning engagement).

The Boston Pre-Kindergarten Program developed their curriculum by integrating proven literacy, math, and social skills interventions. The academic component combined two effective curricula, Building Blocks for math instruction and Opening the World of Learning for language and literacy. Extensive training and coaching was provided. The RD evaluation (Weiland & Yoshikawa, 2013) indicated large impacts on vocabulary, math, and reading



(effect sizes of .45 to .62) and smaller impacts on executive functions (effect sizes of .21 to .28).

Finally, there is a small, but important, group of a few studies that have examined the effectiveness of different instructional approaches for dual language learners (DLL). One example, a study by Farver, Lonigan, and Eppe (2009), randomly assigned Spanish-speaking English-language learners to one of three conditions: (1) a standard Head Start curriculum—High/Scope (control condition), or (2) the Literacy Express Preschool Curriculum (LEPC) in English only, or (3) the LEPC delivered initially in Spanish but transitioning to English over the course of the year. The Literacy Express program focuses on oral language, phonological awareness, and print knowledge in teacher-directed small groups as a supplement to the High/Scope curriculum. Compared with children in the business-as-usual control group, the English-only LEPC and Spanish-transition LEPC conditions were equally effective in improving English literacy skills and only the Spanish-transition model was effective in improving Spanish literacy skills. Effect sizes for statistically significant outcomes across the three group comparisons ranged from .39 to .94.

### *Professional Development*

Professional development (PD) for in-service teachers is increasingly a central focus of efforts to increase the magnitude of ECE program impacts (Martinez-Beck & Zaslow, 2006). PD is commonly used to help teachers improve the overall quality of their classroom or implement a new curriculum. Large-scale PD programs have attempted to improve ECE quality by aligning training with quality measures such as the ECERS or CLASS. Other PD programs use workshops and/or coaches to support teachers' use of curricula. This PD can promote the implementation of a curriculum already in use, a new curriculum, or adaptations to ongoing practice or curricula (e.g., Powell, Diamond, Burchinal, & Koehler, 2010). Finally, some approaches to PD seek to help teachers generate their own lessons or practices within a common pedagogical or content framework (e.g., Buysse, Castro, & Peisner-Feinberg, 2010).

Research has not kept pace with the growth of interest in PD (Desimone, 2009). Several RCTs found positive effects of ECE PD on classroom quality (Bryant et al., 2009; Pianta, Mashburn, Downer, Hamre, & Justice, 2008) and children's outcomes (Powell et al., 2010), but a more common pattern is for investigators to examine or report effects on teachers' practices, not children's outcomes. With few

exceptions (Lonigan, Farver, Phillips, & Clancy-Menchetti, 2011), studies of PD that also involve teachers' use of a new curriculum typically do not systematically vary the PD and curriculum components, thereby making it impossible to determine causally the separate effects of the PD approach and the new curriculum on child outcomes. Furthermore, PD often entails a package of supports to teachers that may include, for example, coursework, individualized work with teachers in their classrooms, and the use of student progress monitoring tools (Landry, Anthony, Swank, & Monesque-Bailey, 2009). There is almost no research on the relative contribution of each component of a PD program.

In spite of the fledging line of research on early childhood teacher PD, an emerging conceptualization of effective PD emphasizes sustained opportunities for teacher learning, content focused on the outcomes teachers are expected to promote in their classrooms, the realities of a teacher's classroom, and active learning and collaborations with PD staff and/or other teachers (e.g., Wayne, Yoon, Zhu, Cronen, & Garet, 2008). These PD emphases have been shaped, in part, by largely theoretical arguments that adults learn new knowledge and skills through reflections on their own practice and interactions with content experts over extended periods of time (Bransford, Brown, & Cocking, 1999).

Below we describe research on outcomes of coursework, coaching (also referred to as mentoring), and professional learning communities in early childhood settings. Although each of these three broad approaches embraces the emerging conceptualization of PD briefly described above (e.g., active participation of teachers for a semester or longer), there are potentially important distinctions in each approach's theory of teacher change. In coaching, for example, an expert's feedback on a teacher's use of a new instructional practice is among the presumed drivers of change, whereas the hypothesized active ingredients of a professional learning community are collaborations with colleagues on lesson development and the collective discussion of reflections on the use of new lessons (Powell, Diamond, & Cockburn, 2012). Our description of PD approaches includes attention to recent technological innovations aimed at improving the efficiency and accessibility of PD.

Several rigorous studies have examined the effects of traditional coursework. Fourteen weeks of coursework within the framework of the CLASS was linked to improved emotional and instruction interactions with students and to higher levels of intentional teaching beliefs

and greater knowledge and skills in detecting effective interactions (effect sizes of .35 to .77) in an RCT (Hamre et al., 2012). Similarly, a 15-week course plus coaching was associated with significant improvements in providers' language and literacy practices (effect size was .77) in a quasi-experimental study (Neuman & Cunningham, 2009). A much shorter, 6-day course on early literacy development resulted in positive effects on observed teachers' instructional practices, with effect sizes of .48 to .60 (Dickinson & Caswell, 2007). The interpretation of these findings, however, has been challenged recently in studies that contrast the effects of coursework and coaching. Two studies contrasted coursework and coaching, regarding promoting literacy activities in one study (Neuman & Wright, 2010) and the CLASS framework in the other (Downer et al., in review). Both studies indicated that the coaching, not coursework, improved instruction and teaching practices.

Coaching entails a content expert (e.g., early literacy specialists) providing individualized support to a teacher or a teaching team in the context of their classrooms. This approach to PD is also known as "consultation" or "mentoring." The method typically involves tailored presentation of and feedback on a teacher's efforts to implement recommended practices (Powell & Diamond, 2011). Often coaching is provided as part of a multi-component PD program that includes introductory (e.g., Powell et al., 2010) or concurrent (e.g., Raver et al., 2008) workshops, an ongoing course (e.g., Neuman & Wright, 2010), and/or web resources (Pianta, Mashburn, et al., 2008; Powell et al., 2010) that offer related PD information on recommended practices. Coaches may also demonstrate the recommended practice in a teacher's classroom (Wasik et al., 2006).

Typically the coach observes a teacher in her/his classroom and then meets with the teacher to provide and discuss feedback on the observation. The feedback focuses on identification of appropriately implemented practices and recommendations for practice improvements, labeled "glows" and "grows," respectively by one PD developer (Landry et al., 2009, p. 452). Furthermore, some programs provide a teacher with opportunities to observe themselves to reflect on their practices through sharing snips from videotapes (Hamre, LoCasale-Crouch, & Pianta, 2008) or transcripts (Dickinson, Watson, & Farran, 2008).

Computer-based technology is being used to extend or enhance individualized support of teachers through a variety of methods, including web conferencing (Amendum, Vernon-Feagans, & Ginsberg, 2011), electronic mail

(Hemmeter, Snyder, Kinder, & Artman, 2011), webcams in classrooms (Pianta, Mashburn, et al., 2008), and software that links a coach's feedback to videotaped segments of a teacher's instruction (Powell et al., 2010). Technology may be employed to link teacher and coach concurrently or to provide feedback asynchronously.

The increased focus on improving ECE quality has led to the development of PD coaching that is aligned with quality measures such as the ECERS or CLASS. Two PD programs have received considerable attention. Partnerships for Inclusion (PFI; Wesley, 1994) is a mentoring model in which the consultant collaborates with the caregiver, using the ECERS-R or FDCRS as a framework to improve quality in center- and home-based ECE settings, respectively. MyTeachingPartner (MTP) is a mentoring model in which the consultants coach the caregiver, often via the web, using the CLASS as a framework to improve quality. Large-scale randomized clinical trials indicated that classroom quality improved (effect sizes of .2 to .6) according to the FDCRS with PFI and the CLASS with MTP, but there were only small changes in a few child outcomes (Bryant et al., 2009; Downer et al., in review; Pianta, Mashburn, et al., 2008).

The ExCELL program illustrates the use of coaching in combination with other PD supports (Wasik, 2010; Wasik & Hindman, 2011). ExCELL is a comprehensive PD model designed to help teachers to use instructional practices that promote children's literacy and language skills. Group trainings focus on five modules (e.g., interactive book reading, alphabet knowledge), and include presenting the specific practices and teaching strategies and asking teachers to practice them in small groups. Weekly coaching is provided during which the coach models the targeted teaching practice and observes the teacher's instruction related to targeted outcomes (e.g., emphasis on letters). Coach feedback on an observation checklist includes positive aspects of the teacher's actions plus recommendations for improvement. An RCT found that children in PD classrooms made significant gains in their vocabulary (effect size of .27) and phonemic knowledge (effect size of .35) (Wasik & Hindman, 2011).

Video libraries of effective instruction have been used in several studies of coaching (Hemmeter et al., 2011; Pianta, Mashburn, et al., 2008; Powell et al., 2010). Powell and his colleagues (2010) conducted an RCT of two literacy and language coaching conditions with Head Start teachers, in-person classroom coaching and technologically mediated coaching. Comparisons of the business-as-usual condition and the two PD groups indicated the two PD interventions improved the global classroom quality and

teachers' instruction of letters and sounds (effect sizes of .91 to .99), including enhanced children's acquisition of letters and sounds (effect sizes of .17 to .29). No differences emerged in comparisons of the in-person or technologically mediating coaching condition (Powell et al., 2010), suggesting that both are effective strategies. Another series of studies conducted by Pianta and colleagues indicates that access to video examples of evidence-based practices can enhance the impact of coaching. As part of the MTP PD, Pianta, Mashburn, et al. (2008) found that providing teachers with access to video exemplars only, without coaching support, leads to quite modest improvements in teachers' instruction, but providing both access to video and coaching resulted in gains in the quality of teacher-child interactions.

A professional learning community commonly consists of a small group of educators and other stakeholders who meet regularly to work collaboratively on improving instructional strategies (Vescio, Ross, & Adams, 2008). A core part of the group's focus is mutually supportive reflection on efforts to implement new or revised classroom practices. To date, most evaluations have relied on teachers' reports of their experiences in learning communities rather than independent observation of practices or assessment of child outcomes (Vescio et al., 2008). An exception, an RCT of a teacher study group approach to PD, found improved instruction by first-grade teachers in teaching reading comprehension and vocabulary instruction, but no differences in children's oral vocabulary (Gersten, Dimino, Jayanthi, Kim, & Santoro, 2010). Professional learning communities have been included in recent ECE programs such as EPIC that have had positive effects on children's math and listening comprehension skills (Fantuzzo et al., 2011), but it is not possible to determine the unique contributions of a PD component to the EPIC outcomes.

A variant on the professional learning community is the "communities of practice" model in which a knowledge base on best practices is developed from teachers' collective experiences and collaborations with researchers (Buysse, Sparkman, & Wesley, 2003). This approach was tested in a PD program for teachers of Latino/a dual language learners in which teachers created lessons around a commonly agreed-upon goal within a scientifically based content framework to provide feedback and reflection on the implementation of the lessons (Buysse et al., 2010). The RCT indicated that the quality of targeted instruction improved, and children showed gains in phonological skills in their primary language but not on other language or literacy skills in either language (Buysse et al., 2010).

## U.S. Public Policy and Early Childcare and Education

U.S. public policy related to childcare (see Dodge & Haskins, Chapter 17, this *Handbook*, this volume) has evolved substantially over several decades, and encompasses the interrelated goals of ensuring children's basic safety, supporting parental employment, and improving children's school readiness. ECE public policies include licensing of ECE settings, initiatives to improve childcare quality, and increasing access to childcare.

State and federal governments have invested heavily in ECE programs based on evidence that high-quality ECE is a cost-effective approach to reducing the income achievement gap (Heckman, 2010). As described above, these U.S. programs include Head Start and Early Head Start funded by the federal government and pre-K programs funded by state governments. Evaluations of these programs have produced mixed findings regarding their impacts on young children, typically those from low-income families.

### Head Start

The oldest, largest, and best known federally funded preschool program is Head Start. Conceived as part of the Johnson administration's War on Poverty, Head Start has served over 27 million children since its inception in 1965 (U.S. Department of Health and Human Services, Administration for Children and Families [ACF], Office of Head Start [OHS], 2011). Federal guidelines require that 90% of the families served in each Head Start program be poor (with incomes below the federal poverty threshold), although there is some discretion to serve children near poverty; the remaining 10% of children served by Head Start have developmental disabilities (USDHHS, ACF, CCB, 2008).<sup>1</sup> Head Start typically provides part- or full-day center-based ECE; more than 90% of Head Start programs are center-based, preschool programs, about half of which provide full-time center care (Hamm, 2006). In 1995, the Early Head Start program was established. It provides a mix of center-based and home-visiting services for children from birth to Age 3 and pregnant women (USDHHS, ACF, OHS, 2011).

Head Start programs are designed to enhance the development of economically disadvantaged children using

<sup>1</sup>Children from families receiving public assistance (TANF or SSI) or children who are in foster care are eligible for Head Start or Early Head Start regardless of family income level. Ten percent of program slots are reserved for children with disabilities, also regardless of income. Tribal Head Start programs may also have more open eligibility requirements (USDHHS ACF, CCB, 2008).

a holistic approach. It offers educational services and dental and mental health screening and access to care for the children, and parenting education and assistance in achieving education and employment goals for the parents (Puma et al., 2005). A high priority is placed on parents' involvement in their children's education and the local administration of Head Start programs (USDHHS, ACF, CCB, 2008). The majority of children enrolled in Head Start in 2009 were 3 (36%) and 4 years old (51%). Approximately 10% of participating children were enrolled in Early Head Start programming for children under 3 years of age. In terms of racial and ethnic composition, about 40% of Head Start attendees in 2007 were European American, 30% were African American, 4% were American Indian/Alaskan Native, and 2% were Asian American.<sup>2</sup> Approximately 36% of children were identified as Latin American, regardless of ethnicity (USDHHS, ACF, OHS, 2011).

Historically, Head Start has enjoyed strong bipartisan support, and Congress overwhelmingly reauthorized the program in November 2007. Funding increased between 1990 and 2002 and remained steady until 2012. In 2009, the federal Head Start appropriation of just over \$7.1 billion was distributed to 1,591 local private and public non-profit grantees serving 904,153 children. This amounts to an estimated average federal cost of \$7,600 per child (USDHHS, ACF, OHS, 2011). In 2007, about 48% of poor 3- and 4-year-olds were enrolled in Head Start<sup>3</sup>, down from 65% in 2000 (Currie & Neidell, 2007). This decline in the percentage of eligible children being served by the program appears to be due to the increase in rates of child poverty during that time and perhaps to increased enrollment in state pre-kindergarten programs among 4-year-olds (Besharov & Higney, 2007).

Since its inception in 1965, Head Start has been heavily studied, and the interpretation of evaluation findings has been contested. Separate RCTs examined the impacts of Early Head Start (EHS) on infants and toddlers and of Head Start on 3-to 4-year-olds. In both studies, the

control group experienced a mix of childcare experiences, including parental care and other forms of nonparental care. The evaluation of EHS indicated modest impacts (effect sizes < .20) on children's early language and social skills and on parenting (Love et al., 2005), but these effects had dissipated by the time children were in fifth grade.

The Head Start Impact Study (HSIS) was undertaken in the late 1990s to evaluate the effect of Head Start on preschoolers. This study randomly assigned children to Head Start or a comparison group in a randomly selected sample of Head Start grantees with wait lists (Puma et al., 2005). The study found small to moderate positive impacts (effect sizes < .4) after 1 year of the Head Start program for both 3- and 4-year-olds and across most child outcome areas assessed except for math—language, early prereading skills, health, and parenting, including reading with children and discipline practices (Puma et al., 2005). A potential explanation for the modest effects was that many of the control group children experienced ECE programs that were similar to Head Start, with some evidence of large effects for Head Start compared with children with home-based care and small effects compared with children with center care (Zhai, Brooks-Gunn, & Waldfogel, 2011). Conclusions about whether Head Start programs have as large of an effect on children's academic and social outcomes as prekindergarten programs differ across studies (Gormley, Phillips, Adelstein, & Shaw, 2010). Across many studies including the HSIS, having a comparison group that experiences other preschool education programs tends to produce smaller program impacts (Shager et al., 2013).

In the HSIS, children were followed through third grade, but the treatment effects largely disappeared by the end of first grade, with some exceptions. Again, alternative care arrangements was an issue with 50% of the 3-year-old control group and only 63% of the 3-year-old treatment group attending Head Start as 4-year-olds. Sustained effects were found for children who were dual language learners, entered Head Start with lower skill levels, or had mothers who reported mild depressive symptoms, and lived in nonurban settings. Other rigorous studies find that Head Start has long-term benefits for attendees such as higher levels of education and reductions in special education and grade retention even with impacts on academic and social skills fading during elementary school (Deming, 2009; Garces, Thomas, & Currie, 2002; R. C. Johnson, 2012; Ludwig & Miller, 2007).

Why program impacts on academic skills would not persist, but differences later in life on outcomes such as education and crime would be found is a puzzle that has not

<sup>2</sup>Other racial identification categories included Hawaiian/Pacific Islander (0.8%), Biracial/Multiracial (4.9%), and Unspecified/Other (18.8%) (USDHHS, ACF, OHS, 2011).

<sup>3</sup>Calculation by the authors, based on the number of 3- and 4-year-olds in poverty in 2007 (Douglas-Hall & Chau, 2008) and the number of children over 3 served by Head Start in the same year (USDHHS, ACF, 2008). Using the same formula, the authors estimate that only 3.3% of eligible children under 3 years of age living in poverty were enrolled in Early Head Start in 2007.



yet been solved. Some studies suggest that these programs may have affected other dimensions of development, such as executive function, self-regulation, or classroom behaviors (Heckman & Masterov, 2007). However, evidence for this as an explanation across studies is scant, as few of the studies have included good measures of these constructs, and program impacts have not been consistently found for some closely related constructs such as problem behavior (Deming, 2009). Thus, much more research is needed to understand for which groups and under what conditions ECE leads to positive outcomes later in life. Part of the puzzle undoubtedly hinges on better understanding how these programs affect a full range of children's skills before they enter schools, and also how later contexts, including school contexts, affect the persistence of these diverse effects over time (Duncan & Magnuson, 2013).

### *Prekindergarten*

Public pre-K programs are a second form of publicly provided preschool by states or local school districts. Most pre-K programs are targeted to low-income children (31 state programs have income eligibility requirements); however, a small but growing number of states either offer, or are currently considering, funding universal access for all 4-year-olds and, in some cases, 3-year-olds (Barnett et al., 2007). These state initiatives are intended to complement existing sources of funding like Head Start. Funding and enrollment in state pre-K programs and early education programs have increased dramatically over the past several years. As of 2011, 39 states and the District of Columbia had pre-K initiatives serving approximately 28% of 4-year-olds and 4% of 3-year-olds (Barnett, Carolan, Fitzgerald, & Squires, 2011). In tight budgetary times, states have decreased inflation-adjusted spending on pre-K.

An examination of state pre-K programs in 2010 to 2011 by the National Institute for Early Education Research (NIEER) reported substantial variation in funding, program design, and quality across states (Barnett et al., 2011). Although it is difficult to measure the costs of programs, NIEER reported that the average per pupil state pre-K expenditure in 2011 was \$4,151, with considerable state-to-state variation. It is important to note, however, that per pupil state expenditure figures may underestimate actual spending per student, as many state pre-K programs receive local funding, and it is difficult to calculate such support.

Of the 39 programs examined by NIEER, 11 were full-day programs, 12 were half-day programs, and 28 had

locally determined operating hours. Eight states enrolled over half of their state's 4-year-old population. Although some programs offer an extensive set of support services, such as transportation and health screenings and referrals, others offer very few. Most states use a mixed service delivery system that provides programming in schools as well as community-based settings, by contracting with privately run preschools and federally funded Head Start programs. Approximately one-third of children receiving pre-K services in 2011 were served outside the public schools (Barnett et al., 2011).

Using a combination of quasi-experimental methods, evaluations of state pre-K programs have generally yielded positive impacts. Children who attend state or local prekindergarten programs, on average, perform better at kindergarten entry on measures of math and literacy skills than children who spend their prekindergarten years exclusively in parental care or in other types of informal care (Magnuson et al., 2004; Phillips & Adams, 2001), with large effects in evaluations of two strong pre-K programs in Tulsa and Boston (Gormley et al., 2005; Weiland & Yoshikawa, 2013). A meta-analysis of some of the strongest prekindergarten programs revealed moderate to large impacts on academic skills and neutral to modestly positive effects on language and social skills, compared to children in all other types of care (parental and non-parental) and suggested that these effects persist through age 10 (Barnett et al., 2011). It is clear, however, these findings do not apply to all prekindergarten programs because of large differences across states in program quality and observed child outcomes (Howes et al., 2008).

### *Licensing*

Ensuring the basic safety of childcare is undertaken by state regulation of childcare providers. Every state regulates the childcare industry to some degree, as childcare establishments must obtain licensure to enter the market, but considerable differences exist across state in the extent of regulation and in how closely requirements are monitored (Hotz & Xiao, 2005).

State rules fall into two main categories: structural and safety. Structural regulations are those that mandate maximum child-to-staff ratios, minimum caregiver experience/education requirements, ongoing education requirements, and maximum classroom size. The child ratios and classroom size requirements vary, depending on the age of the children in the program. Safety regulations include stipulations regarding staff training in CPR/first aid, immunizations, criminal background checks, and compliance

with the provision of nutritional meals. In addition, some states have licensing rules and policies about the use of developmentally appropriate activities.

States also have varying levels of rigor related to monitoring programs to ensure that they are complying with childcare licensing requirements. Although the impact of state-level regulations on the level of quality in the regulated childcare market remains uncertain, both theory and evidence suggest that higher levels of state regulation are linked with higher-process quality care in regulated types of care, including family and center-based care (Blau, 2003). However, more stringent regulation, in particular regulations that increase staffing costs such as higher minimum levels of caregiver's education and lower staff-to-child ratios, have the adverse effect of reducing supply and increasing cost.

### ***Quality Rating and Improvement Systems***

Starting about 20 years ago, states created market-based incentive systems, termed quality rating and improvement systems (QRIS). QRIS are designed to assign early childhood education and care providers a rating level, along a quality continuum, and typically serve two functions. First, they provide a standard way of rating program quality, based on multiple criteria, and making the rating available to parents. Nearly all states include staff training and education and the classroom or learning environment (although the latter is only measured at higher levels of quality in some states). States differ on whether and to what extent they include parent-involvement activities, business practices, child-staff ratios, or national accreditation status. The assumption underlying this QRIS function is that parents often lack good information about program quality and if they had it they would be more likely to choose higher-rated settings. As a result, lower-quality providers would face an incentive to either improve the quality of their program or to leave the market (Zellman & Perlman, 2008).

Second, most QRIS provide a range of technical assistance, resources, and incentives for programs to improve program quality. Such efforts include consultation around quality improvement, increased investments for professional development scholarships, micro grants for other targeted quality improvement efforts, and in some instances higher levels of subsidy payments for more highly rated programs. The goal of these efforts is to foster and support providers' efforts to improve the quality of care they provide. Thus QRIS programs attempt to improve quality by affecting both the demand for high-quality care and the

supply of such care. Of course, the success of such efforts rests on the ability of rating systems to accurately identify and measure key aspects of quality and the willingness of providers to participate in a rating system (Zellman & Perlman, 2008).

Given the relative infancy of most state QRIS programs, it is not surprising that conclusions about their effectiveness are premature. To date most research has focused around issues of implementation and has been descriptive. Moreover, the difference in system designs across states makes it difficult to draw any general conclusions from an evaluation of any one state's system, and few states have examined child outcomes to date. A small study in Missouri found that low-income children in higher-rated programs learned more than their peers in lower-rated programs (Thornberg, Mayfield, Hawks, & Fuger, 2009). However, a large study of Colorado's rating system did not find that children's gains in school readiness differed systematically across star rating levels (Zellman, Perlman, Le, & Setodji, 2008). The Colorado report highlighted how difficult it is to study children in a system with such high levels of turnover (and thus low levels of exposure to a particular program). A reanalysis of extant data using the rating systems from several states found few associations between overall star ratings and either observed quality or child outcomes (Sabol, Soliday Hong, Pianta, & Burchinal, 2013).

### ***Community-Based Initiatives and Childcare Subsidies***

A few other states' quality improvement innovations have garnered attention and been scrutinized. Most prominent is North Carolina's Smart Start program, which began as a pilot place-based program in 1993 and expanded to statewide implementation by the late 1990s. The program provided funding for local, typically county-level partnerships to improve quality of early childhood education and care as well as other efforts to promote children's healthy development such as home-visiting and parenting programs. Discretion for how Smart Start funds should be spent was given to local boards, but partnerships were required to focus on improving quality and ensuring that more low-income children attended high-quality care. Early reports suggested that almost 30% of funds were spent on quality improvement efforts and that proportion of centers rated as high quality improved dramatically in these counties (Bryant et al., 2003; USDHHS, CCB, 2008). Moreover, recent rigorous work has found that when combined with funding for 4-year-olds to attend

preschool, the program improved children's test scores in third grade (Ladd, Muschkin, & Dodge, 2012).

Childcare can be quite costly for families, especially infant care and center-based care. In 2010, the average cost of full-time care for an infant for a year averaged about \$9,100 for center-based care and \$6,900 for family-based care (National Association of Child Care Resource & Referral Agencies, 2011). Maternal employment is depressed by the high costs of care and policies and programs that reduce such costs increase mothers' labor market efforts. In an attempt to support working parents, the federal government has undertaken several policy initiatives to offset the high costs of childcare.

Families with working parents receive some support through the federal child and dependent care tax credit as well as the dependent care assistance plan, and, in many states, through supplemental state childcare tax credits (Donahue & Campbell, 2002; Smolensky & Gootman, 2003). Currently, the expense limits are \$3,000 for one child and \$6,000 for two or more children. As a nonrefundable tax credit this subsidy primarily benefits middle- and high-income families.

Support for the employment of low-income families is provided by means-tested childcare subsidies (funded with both federal and state dollars). Childcare subsidies lower the cost of private, market-based nonparental care for low-income families in which parents work or participate in education or other training activities (Magnuson et al., 2007). Subsidies are most commonly distributed in the form of vouchers, but can be paid directly to childcare providers. Currently, childcare subsidy programs are funded by a combination of three federal block grants. The largest federal block grant, the Child Care and Development Fund (CCDF), is designed to provide childcare assistance for families with incomes below 85 percent of the state median. Four percent of CCDF funds must be used to improve childcare quality (M. Greenberg, 2007). State CCDF programs are required to ensure "parental choice" regarding type of care; so vouchers may be used for any eligible childcare provider, including informal care by friends, relatives, and babysitters. Slightly more than half of the children served by CCDF funding attend center-based childcare (USDHHS, ACF, CCB, 2008). In addition, state programs are required to set payment levels that allow families "equal access" to childcare comparable to more affluent families (M. Greenberg, 2007), with a recommended reimbursement rate that is 75 percent of current market rates (Schulman & Blank, 2008). States, however, have substantial flexibility to establish income eligibility

requirements, parental copayment fees, and provider reimbursement rates (M. Greenberg, 2007; Assistant Secretary for Planning and Evaluation [ASPE], 2008).

Proportionately few eligible families use subsidies, and the length of time that children are enrolled tends to be short. In 2005, estimates suggested that only 2.43 million (29%) of the 8.23 million eligible children ages 0 to 12 received subsidized care (ASPE, 2008). By 2011, 22 states had waiting lists for childcare assistance, although it is important to note that states with waiting lists typically have more generous eligibility guidelines than states without waiting lists (Schulman & Blank, 2011). Periods of subsidy receipt tend to be quite short, often less than 6 months (Ha & Meyer, 2010; Meyers et al., 2002). Reentry into subsidy programs was also common; with large proportions of children who exit the subsidy system returning within 12 months.

Use of childcare subsidies has been associated with the use of slightly higher-quality care, but not with improved child outcomes. Use of subsidies was related to increased use of center care, and thereby increased overall quality of care because, on average, the quality of ECE was higher in center care than in home-based care (A. D. Johnson, Martin, & Brooks-Gunn, 2013). However, subsidy receipt has not been linked to higher levels of school readiness skills, and some evidence exists that skill levels may be lower (Herbst & Tekin, 2010; A. D. Johnson et al., 2013).

## Summary

The ability of ECE to prepare children for school and to improve the school readiness of children who are economically disadvantaged has led to a wide variety of public policies focused on increasing access to ECE and to improving ECE quality. Publicly funded programs like prekindergarten and Head Start have provided higher-quality center care for children, often from low-income families, and evaluations suggest short-term effects on children and families. While long-term effects on academic skills are not observed, differences in other important long-term outcomes are found such as lower levels of special education placement, higher levels of educational attainment and earnings, and lower levels of crime. Why such important long-run effects are found is not clear, though some suggest that program impacts on executive functioning and social adjustment may be part of the explanation.

Overall, research has shifted from investigating whether and how childcare affects children to identifying

professional development and classroom practices that increase ECE effectiveness. Recent studies of specific teaching practices, curricula, child progress monitoring tools, and professional development are yielding information about how to create ECE systems and settings that support children's development and family needs. To address these questions, studies must include rigorous designs, adequate sample sizes, successful implementation of targeted practices and instruction, as well as child assessments that are likely to be affected by the changes in practices and instruction. Developing effective programs, however, is hard because the ECE workforce often works long hours for low salaries, this often results in workers with low levels of education and high rates of job turnover. Sometimes, these circumstances make implementing complex interventions quite challenging.

Overall, there is growing evidence that curricula and PD that are intensive, focused, and sequential can have positive impacts on ECE instruction and on children's learning. In addition, PD that involves either focused training aligned with a specific set of practices or curriculum and PD that involves professional learning communities have been proven effective in improving quality, and in some case, child outcomes. Public policies have evolved that focus on ensuring that providers meet basic health and safety benchmarks, improving quality of care (QRIS), and encouraging parental employment (childcare tax credits and subsidies). Not surprisingly, there is only limited overlap among all of these initiatives, and mixed evidence regarding the effectiveness of these policies.

## CONCLUSIONS

The developmental questions examined by ECE researchers have transformed over the past 50 years from questions about whether ECE is good or bad to a focus on identifying and promoting practices that promote developmental skills. Most children in many countries, often beginning in the first or second year, experience nonparental care. Although some types of ECE (e.g., high-quality intervention or prekindergarten programs) have large positive impacts on children's early language and academic skills, much of the ECE research documents modest associations in studies that use rigorous methods to account for potential confounds associated with parental selection of care. Accordingly, the focus of much of the ECE research has shifted from investigating whether ECE programs are linked with children's developmental outcomes to trying

to better understand how programs and care settings can be changed to improve outcomes for children.

Several overarching conclusions can be drawn from the extensive ECE literature examining immediate and long-term impacts of ECE type, quality, and quantity. Accumulated research demonstrates that high-quality ECE and center-based ECE improve the likelihood that children succeed in school, especially vulnerable children. Although ECE tends to have smaller effects than many family characteristics on early development, good-quality ECE has the potential to promote positive outcomes for all children, and serve as a protective factor for DLL children or children who experience social risk factors such as poverty. Long hours of childcare early in life may increase problem behaviors, at least for middle-class children, perhaps due to impacts of exposure to large peer groups on the young child's stress response.

Currently, research is focused on understanding heterogeneity in the effects of ECE, including what ECE experiences are beneficial (or harmful) for which children and under what specific circumstances. This important work is complicated by the need for large data collection efforts, with both large sample sizes and detailed measurements, in order to detect differences across groups of caregivers and children as well as across a variety of ECE dimensions. Attention to the role of specific teaching practices, curricula, child progress monitoring, and professional development is yielding information about how to create ECE systems and settings that support children's development and family needs. Program development and research efforts are also increasingly incorporating insights about the feasibility of program implementation, and taking the relatively low wages and education of the workforce into account. However, past efforts suggest that it can be difficult to improve quality and to maintain those improvements over time.

Historically, public policy has focused on ensuring the safety of children in ECE settings and increasing access for low-income children to early education programs and other forms of childcare if their parents are working. More recently, the recognition of early learning as an important foundation for all children has led to the expansion of investing in early education (prekindergarten programs), and efforts to improve the overall quality of care that children experience (QRIS). Many, though not all, of these policies and investments have led to descriptive and evaluative research projects that have been used to better understand how these efforts have affected communities, ECE settings, and children. These research efforts,



especially those focused on increasing ECE quality as a means to improve child outcomes, suggest that more attention needs to be paid to identifying specific practices that promote early development. An iterative process, in which research findings inform policy and programmatic responses, and then studying new efforts has the potential to build ECE systems and programs that better serve family and children's diverse needs and promote children's early learning.

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## CHAPTER 7

# Children at School

ROBERT CROSNOE and APRILE D. BENNER

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## INTRODUCTION

Over three decades ago, a book by British researchers laid out the powerful role of schools in the life course. Its title, *Fifteen Thousand Hours* (Rutter, Maughan, Mortimer, & Ouston, 1979), refers to the sheer amount of time young people spend in school and in school-related activities over the course of childhood and adolescence, the point being that schools dominate the daily lives of youth in ways that give schools extraordinary power to shape child development. Although school time varies by stage of schooling and across countries, this point is remarkably generalizable. School is a dominant setting of the developmental ecology, and, as such, a major component of the organizational structure of society. What goes on in schools, therefore, influences the short- and long-term outcomes of

children and youth and, in the process, affects the stability, composition, and productivity of the population at large (J. Coleman, 1961; Crosnoe, 2011; L. D. Steinberg, Brown, & Dornbusch, 1996).

Given the wide-ranging significance of schools, the inner workings of schools and their effects on young people have long been subjects of social and behavioral research. This literature is interdisciplinary, cutting across psychology, sociology, economics, anthropology, educational science, and other fields, and developmental science has been well represented in school research. Together this foundation of theory and empirical evidence connects the macrostructures of the educational system to the microprocesses of learning and cognition and the complex layers in between (Arum, 2000; Eccles & Wigfield, 2002; Winne & Nesbit, 2010). The breadth of research on schools is evidenced in the representation of schooling-related topics in journals across disciplines, the centrality of schools to theories of child development, and the frequent focus on schools in translational research. Indeed, schools are such key parts of youth-focused policy in many countries that elucidating educational processes and impacts is one venue

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through which developmental researchers influence practice. Such research-policy connections surround numerous issues about children and youth, including school size, preschool investment, desegregation, reading instruction pedagogies, and STEM (science, technology, engineering, and mathematics) education. The importance of a careful account of school contexts is crucial to many actions taken to improve the lives of young people (Crosnoe, 2011).

Given the breadth of research on schools and related policy, any handbook chapter titled “Children at School” has enormous ground to cover. We cannot cover everything here and have to be more strategic. We start with the big picture: What are the general theoretical orientations toward schools in developmental science and what is the basic role of schools in the lives of young people and in the functioning of society? Working from this foundation, we then discuss two different but related sides of school: (1) schools as educational institutions, tapping into the formal, educational side of schooling involving processes of instruction and learning as a means of shaping students’ future socioeconomic prospects, and (2) schools as social contexts, tapping into the informal, socioemotional side of schooling involving interpersonal and psychological processes as a means of shaping students’ general well-being. In the process, we focus on the inputs of each side (e.g., what is occurring in schools and in interactions between children and schools) and also cover the outputs (e.g., what happens to children as a function of schooling). After sketching out these sides of schooling, we turn to concrete examples of how the two come together in the lives of young people, in terms of research insights and major policy interventions. The purpose is to demonstrate how the two sides of schooling are theoretically and practically meaningful in their own right but also difficult to disentangle in reality.

Moving through these four stages (big picture, schools as educational institutions, schools as social contexts, linking the two sides of schooling), we delve into fundamentals of the broad topic of schooling, such as student achievement, engagement, and attainment as well as school structure, composition, and climate. Many controversial issues will be addressed, such as school choice (e.g., vouchers, charter schools). Unfortunately, some important and timely topics will not get their due—such as disabilities and home schooling—simply because our space is constrained. For the same reason, we concentrate on U.S.-based research, although we bring in international research for key comparisons and contrasts. We also focus primarily on contemporary research, especially from the time since the sixth edition of the *Handbook* was published. The bottom line is

that we have tried to choose the topics that represent many different areas and interests.

## KEY THEORIES AND RESEARCH THEMES

A good way to set the stage is to sketch out how developmental scientists tend to think about schools and their role in the life course. We can then integrate the insights gleaned from such developmental perspectives with those from other disciplinary perspectives. Doing so makes the case for an affirmative answer to the fundamental question of this chapter: Do schools matter? We then delve into the question of *how* schools matter.

### Role of Schools in Developmental Theory

Theories of education abound, and several educational theories are explicitly developmental. For example, Eccles and colleagues have articulated, tested, and refined the expectancy-value model, which theorizes that achievement is grounded in the expectations that young people develop about their chances for success as well as how much they come to value that success (Eccles & Wigfield, 2002). Another example is the frog pond perspective, a variant of social comparison theory concerning the development of academic self-concept. It contends that young people evaluate themselves relative to their school and classroom peers regardless of how those peers compare to the larger educational system. As a result, children can come to see themselves as academically capable even if they are not so long as they do better than the children around them (Marsh & Hau, 2003).

Of greater concern here is the treatment of schools in more general developmental theory, not just in explicitly educational perspectives. Many models of development implicitly and explicitly incorporate schools. Typically, these models are contextually focused and emphasize environmental influences on developmental processes and, as such, offer a way to bring in schools even if they are not about schools or education per se.

For the most part, these theoretical models can be grouped within the “family” of theories—or a metatheory—generally referred to as relational developmental systems perspectives (Lerner, Lewin-Bizan, & Warren, 2010; Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1). In contrast to predominant theories of development in decades past, relational developmental systems perspectives eschew false dichotomies between different facets



of development (or components of developmental ecology), deemphasize underlying assumptions of uniformity and permanence, and stress issues of diversity and dynamic change. The core unit of analysis is the mutual influence between individual and context, highlighting transactions across all levels of developmental organization inside and outside the individual. Importantly, the focus in relational developmental systems perspectives on plasticity, diversity, and historical embeddedness facilitates the translation between research and practice, as it suggests the potential for internal and external change that can be targeted by prevention, intervention and policy to promote positive development and reduce developmental disparities.

Schools fit well into the general approach of relational developmental systems perspectives. In this approach, the school is an institutional system in which the child is embedded, one that can be internally divided into subsystems (e.g., classrooms), is itself embedded within larger systems (e.g., community, policy), overlaps with more interpersonal systems in which children are also embedded (e.g., peer networks), and interacts with social systems to which children are exposed through their parents (e.g., work). Moreover, two children will likely experience even the same complex interactions among external systems in divergent ways if their internal systems (e.g., genetic capacities for learning, self-regulating capacities, attributional biases) differ and interact with each other in different ways (Lerner, Dowling, & Chaudhuri, 2004). Significantly, the school-related insights of this approach are useful for identifying and unpacking risk statuses in the educational system, thereby informing prevention and intervention efforts (Pianta & Walsh, 1996).

Having discussed the place of schools in relational developmental systems perspectives, we want to illustrate their relevance to specific examples of relational developmental systems perspectives: the bioecological model and the life course paradigm.

First, perhaps the most prominent example of a relational developmental systems perspective that allows for broader consideration of schools in general development is the bioecological model of development (Bronfenbrenner & Morris, 2006). Its main point is that development occurs within a web of overlapping contexts—the developmental ecology—that children are influenced by but also help to construct in a complex dynamic by which environmental and child (e.g., genetic, dispositional) characteristics interact. This model highlights various systems within the developmental ecology, all of which are frequently used to

motivate research on schools. The microsystem involves the direct influences of context on children, the mesosystem the interactive influences of multiple microsystems on children, and the macrosystem more distal contexts that influence children indirectly or interactively. Schools represent a microsystem—where children attend school and what happens to them there factors into their adjustment and functioning, including their learning but also more general behaviors (J. S. Hong & Garbarino, 2012). At the same time, schools are part of mesosystem interactions with other microsystems. For example, the importance of schools in children's development depends in part on what is happening within peer groups in school, in the homes of the children attending the school, and in the communities in which the schools are embedded (Christenson, 2003; Ryan, 2001). Schools are also concrete physical sites of the more diffuse institutional system of education that reaches across society and apportions opportunities, influences culture, and stratifies groups. In this sense, schools also represent a macrosystem (Arum, 2000; Morgan, 2005). Indeed, conceptualizing the developmental ecology of children in the United States (or most other countries) without ample attention to the multidimensional significance of schools is not possible.

Second, the life course perspective also emphasizes the developmental significance of context, but it goes further to consider macrolevel conceptions of context and to link individual developmental timing to societal historical timing (Elder, 1998). Like other relational developmental systems perspectives, however, its basic principles are especially relevant to thinking about the role of schools in children's lives. The central imagery of the perspective is of the life course as a tapestry of threads woven together over time and within context. Primary threads are developmental trajectories (unfolding patterns of physical and psychological growth and maturation), social convoys (continuity and change matrices of relationships and ties), and social pathways (sequences of institutional and organizational roles entered into and exited from over time). These dynamic threads are internally structured by transitions in role, stage, and setting that represent potential turning points. Moreover, context can range from the proximate settings of everyday life to abstract conceptions of social structure and history (Crosnoe & Johnson, 2011). One can think of the "educational life course," consisting of interactions among developing cognitive capacities within children (developmental trajectories), interpersonal ties with teachers and peers (social convoys), and school roles that children undertake (social pathways) as they transition

across grades and acquire credentials that mark changing statuses and settings of schooling. These interactions occur within particular contexts organized by schools and larger policymaking arenas (Benner, Graham, & Mistry, 2008; Langenkamp, 2010). The life course perspective has been particularly valuable in considering how developmental and ecological experiences are linked to inequality. It has been used to demonstrate how disparities (e.g., ethnic, socioeconomic) between segments of the child population build over time as they are acted on by schools (Entwisle, Alexander, & Olson, 2005).

This discussion of relational developmental systems perspectives in general and specific examples of such perspectives demonstrates some basic similarities in how schools tend to be treated in developmental models. It also reveals the special insights that can be gleaned by approaching schools in different ways depending on the questions of interest.

### **Significance of Schooling in the Short and Long Term**

The prominence of schooling in many developmental theories reflects the importance of schooling in the life course. Schools can have an enormous impact on how children turn out and their prospects for the future (Entwisle et al., 2005). Thus, theory reflects reality. The bulk of this chapter concerns the period in which children and youth attend school, focusing on how they are affected by what happens to them in the short term as a result of concurrent schooling experiences. Yet, although the length of the educational career is usually quite long for young people in developed countries, it is still many years and even decades shorter than the portion of their lives that unfold after the educational career is over. Thus, the long-term implications of schooling also need to be addressed.

In public discussions, the long-run impact of schooling is often conveyed in terms of “returns”—what do young people get over the course of their lives for the time, effort, and expense they put into their schooling? Return is an economic concept, but it translates well across disciplines. At the most basic level, returns to schooling refer to the increase in lifetime earnings associated with receiving a certain educational credential compared to receiving a lower-level credential (Goldin & Katz, 2008). For example, the earnings premium of receiving a bachelor’s degree (vs. a high school diploma) in the United States has increased rapidly over the past several decades, and it is now at an all-time high (Bureau of Labor Statistics, 2012). This change

has resulted from the restructuring of the global economy and its effects on the U.S. labor market. Historically, the labor market had a pyramid shape, with high-skilled, well-paying jobs at the top, low-skilled, unstable jobs at the bottom, and a solid stratum of secure jobs with benefits and opportunities for mobility in the middle. The decline of the manufacturing sector of the economy since the 1960s has hollowed out the middle, leaving an hourglass-shaped labor market in which advanced educational training and credentials are the primary means of pushing through the bottleneck (Fischer & Hout, 2006). Thus, matriculating at and graduating from a 4-year college has never brought greater returns than it does now, even in the context of the Great Recession (Grusky, Western, & Wimer, 2011). Such earnings premiums help connect the educational careers of individual youth to much broader social, economic, and historical forces. In light of these returns, the classroom and school experiences of children in the educational system right now can have effects on their lives long after they have left the system by contributing to the ultimate level of education and occupational status they attain.

Yet, considering the returns to schooling solely in financial or economic terms is too narrow. The general idea extends to many other domains of adjustment and functioning. Strikingly, educational attainment is powerfully related to mortality (Miech, Pampel, Kim, & Rogers, 2011). The more education one attains, the longer one lives. Although partially explained by the known and unknown factors that affect both educational attainment and life expectancy (including genetic predispositions and other heritable traits), this association seems to be at least partly causal. Moreover, it tends to grow stronger in both historical time (i.e., across cohorts) and developmental time (i.e., with age). It is rooted in aforementioned socioeconomic benefits of educational attainment but also in social, cultural, and cognitive resources that education cultivates (Lynch, 2003). For example, education tends to broaden social networks, which provide larger and more diverse pools of social support, and it enhances critical thinking skills that allow for better decision-making about health and health behaviors (Mirowsky & Ross, 2003). Moving beyond health, educational attainment is strongly related to family formation. Marriage and divorce rates vary widely by educational attainment, with college graduates overwhelmingly more likely to get and stay married than their counterparts with lower levels of education (Musick, Brand, & Davis, 2012; Schoen & Cheng, 2006). College graduates also have fewer children on average

but are much more likely to have children inside the confines of marriage (Cherlin, 2009). Again, these returns to educational attainment indicate that classroom and school experiences can have cascading effects if they contribute to how much education young people ultimately attain.

Importantly, the degree to which education shapes these varied dimensions of life course functioning then circles back around to affect children. According to the diverging destinies argument of McLanahan (2004), the increased coupling of educational attainment with economic status, marriage, and health among parents means that some children have more advantages growing up than others, including advantages meted out in their own educational careers. Such advantages are magnified by the greater tendency for more educated parents to engage in developmentally appropriate parenting practices, actively manage their children's opportunities, and advocate for their children in school (Hill & Tyson, 2009; Kalil, Ryan, & Corey, 2012; Lareau, 2003). Thus, the long-term implications of educational attainment are intergenerational.

The degree to which short-term experiences in school have long-term implications for the life course speaks to the need to carefully consider issues of timing in both theory and practice. Essentially, school effects on development appear to accumulate over time in interaction with children's genetically influenced traits and abilities and their developing skills and characteristics. Yet, this accumulation may not be strictly linear, with discontinuous bursts of progress (and disparities) at certain points. Consequently, interventions may create more change when they target early periods in the accumulation process, an argument borne out by econometric evaluations of early childhood education programs. This work suggests that early interventions have more payoff in the long run than those targeting later stages of development and schooling (Heckman, 2006). At the same time, later interventions may increase their effectiveness by targeting critical periods—even if action is taken “late,” it may succeed if it is strategically targeted. As will be covered later in this chapter, transitions between school levels represent one type of critical period. For example, given what researchers know about academic and social disruptions during the transition from middle school to high school, interventions aiming to reduce some academic or social issue targeting adolescents who are making this transition may be more effective than interventions targeting adolescents more generally, as certain social experiences may place adolescents at particular risk (Benner & Graham, 2009).

## The Link Between Education and Inequality

The importance of schooling is not limited to the individual life course. Schooling is also a key component of societal organization. How schooling unfolds in any society both reflects and shapes the economic, political, and social context of that society. One striking example of how the schooling of individual children is linked to the larger social structure is inequality. Schooling is shaped by the unequal statuses and opportunities tied to ethnicity, class, immigration, and gender, and it contributes to this stratification. To use Bronfenbrenner's terminology, schooling creates two-way exchanges between microsystems and macrosystems.

Beginning with the release of the Coleman Report in 1966 (J. S. Coleman et al., 1996), much of the discussion about the role of schools in *ethnic inequality* has concentrated on differences between schools serving predominantly European American populations and those serving predominantly minority populations. The segregation of ethnicities into separate schools long after the Brown decision in 1954 has been a major concern, and attention has slowly shifted from the traditional European American/African American divide to the segregation of a variety of ethnic and immigrant groups (P. R. Goldsmith, 2009; Reardon, Grewal, Kalogrides, & Greenberg, 2012). One reason that persistent segregation is problematic is that it tends to go along with stark disparities in resources. In a segregated system, European American and non-European American children simply do not receive the same quality of schooling because of differences between their schools in funding, teacher turnover, materials, and other factors (Rothstein, 2004; Schofield, 1995). Yet, one argument of the Coleman Report was that between-school resource differences did not explain away ethnic achievement gaps. Instead, between-school differences in climate needed to be taken into account. Developmentalists have contributed a great deal to this enterprise, exploring dimensions of climate such as intergenerational support, feelings of connectedness among students, and achievement values and how they encourage positive outcomes and reduce ethnic achievement gaps (Cook, Murphy, & Hunt, 2000; Graham & Juvonen, 2002; M. K. Johnson, Crosnoe, & Elder, 2001; L. D. Steinberg et al., 1996).

Despite the heavy focus on between-school differences in research and policy on the role of schools in ethnic inequality, within-school processes have also been examined and debated. Three provocative debates have concerned ethnic differences in peer influences, stereotype

threat, and identity development. First, the oppositional culture thesis contends that African American and Latino/a American peer contexts equate academic achievement with “acting White,” thereby disincentivizing achievement. Empirical support for this thesis, however, is weak. Moreover, some qualitative studies have argued that, when such academic denigration does occur, it is not ethnic in nature (Harris, 2006; Tyson, Darity, & Castellino, 2005). Second, stereotype threat refers to the ways in which youth can be negatively affected by their perceptions about how others see members of their own ethnic group, regardless of whether they accept or reject these views. Simply knowing that negative stereotypes about the academic abilities of one’s ethnicity are out there in the world can disrupt concentration and confidence in academic tasks by creating a fear of fulfilling those stereotypes. Although criticized for seemingly blaming the victim, the theory actually demonstrates how insidious prejudice can be (Blascovich, Spencer, Quinn, & Steele, 2001; McKown & Strambler, 2009). Third, ethnic identity concerns the meaning attached to ethnicity within individuals’ overall senses of self. Evidence suggests that strong ethnic identities—characterized by salience, centrality, regard, and positive ideology—promote positive outcomes among youth from traditionally disadvantaged groups (Seaton, Sellers, & Scottham, 2006; Umaña-Taylor, Gonzales-Backen, & Guimond, 2009). Importantly, such identity development and related attitudes about ethnicity are influenced by schools in the form of ethnic diversity, positive ethnic relations, and prodiversity curricula (Graham & Juvonen, 2002; Pfeifer, Brown, & Juvonen, 2007). These examples illustrate how the link between ethnicity and schooling goes beyond the tendency for members of different groups to attend different schools.

Although between- and within-school differences have been central to research and theory on *socioeconomic inequality* in the United States (Rothstein, 2004), this literature has also highlighted out-of-school settings as factors in socioeconomic disparities in in-school behavior. The focus has been on context more than psychological or emotional processes. Research on community contexts has established how the prevalence of socioeconomically advantaged or disadvantaged residents in a neighborhood can shape networks of information, support, and assistance available to children as they navigate the educational system, how crime and disorganization in neighborhoods can interfere with schooling, and how a community’s characteristics can shape the effectiveness of its schools (Briggs, 2003; Leventhal & Brooks-Gunn, 2000). Tellingly,

one large theoretically grounded research-based policy program—Moving to Opportunity, in which low-income families were given vouchers to relocate from high poverty to low poverty neighborhoods—had disappointing results in terms of child outcomes in part because changing school contexts was not emphasized as much as changing neighborhood contexts (Kling, Liebman, & Katz, 2007). Community and school processes can be difficult to disentangle, especially when trying to explain and address socioeconomic disparities in educational outcomes (Clampet-Lundquist, Edin, Kling, & Duncan, 2011; DeLuca & Dayton, 2009).

The families living within neighborhoods, rather than the neighborhoods themselves, have more often been the major subject of research on socioeconomic inequality, out-of-school contexts, and in-school performance (Bradley & Corwyn, 2002). Drawing on Elder’s pioneering study of the Great Depression (1974) as well as investment models from economics (Conger & Donnellan, 2007), the family process model exemplifies how developmental researchers have viewed the family context as a mechanism of socioeconomic disparities in child outcomes. This model posits that the effects of socioeconomic disadvantage on schooling are filtered through intrafamily dynamics. Poverty and economic stress influence parents’ functioning and relationships, which affect their parenting behavior and how they manage their children’s learning and education (e.g., disciplinary styles, sensitivity), which, in turn, affect children’s academic functioning (Crosnoe & Cooper, 2010; Davis-Kean, 2005; Mistry, Biesanz, Taylor, Burchinal, & Cox, 2004; Raver, Gershoff, & Aber, 2007). Echoes of the family process model can be found in other theoretical approaches outside of developmental psychology, such as the concerted cultivation thesis of Lareau (2003). Unlike the family process model, this thesis focuses on the advantages of high socioeconomic status. It contends that the rituals, norms, and philosophies that develop as a function of families’ long-term positions in the class hierarchy of the United States stratify children’s educational prospects. Socioeconomically advantaged parents internalize and practice concerted cultivation, which involves their active orchestration of children’s skills, talents, and opportunities for achievement through formal activities, active advocacy at school, and socialization into reason-based discussions. Through such cultivation, they and their children demand investments from schools that give them a competitive edge academically. The basic insights Lareau (2003) gleaned from her intensive ethnographic work have been replicated in quantitative studies (Cheadle, 2008).



These parenting-focused approaches have been criticized for ignoring institutional and structural forces, but they shine a light on how parents are rewarded or victimized by the socioeconomic stratification system in ways that they then pass on to their children.

Another angle on the role of families and schools in socioeconomic disparities in educational progress concerns the summer learning gap. This gap refers to group differences in learning and skill development that occur during the summer months compared to during the school year. The importance of these differences is that any summer gap is not strongly a function of school contexts and, is therefore, more difficult to target through traditional educational policies (Alexander, Entwisle, & Olson, 2007). Ample research, primarily occurring outside of psychology, has explored the summer learning gap. The consensus is that, once children have entered formal schooling, much of the growth in socioeconomic disparities in academic achievement occurs during summer. The same is not true of ethnic disparities, which tend to widen during the school year and the summer months reflecting stronger differential treatment in schools related to ethnicity than socioeconomic status. This socioeconomic phenomenon reflects many of the family processes discussed above, speaks to the equalizing role of schools, and suggests policy interventions targeting schools (e.g., extending school years), families (e.g., building family-school partnerships), and communities (e.g., programs for continued stimulation outside of schools; Burkam, Ready, Lee, & LoGerfo, 2004; Condon, 2009; Downey, von Hippel, & Hughes, 2008).

One form of stratification that connects ethnicity and socioeconomic status involves disparities in schooling related to immigration. Interest in immigration-related disparities has grown as the size and heterogeneity of the immigrant population have increased in the aftermath of the reform of federal U.S. immigration laws in the 1960s (Kao, 2004). In many ways, immigrants would appear to be disadvantaged in U.S. schools. On average, they are more likely than their peers to come from poor families with less-educated parents. Language barriers among immigrant children can interfere with learning, and language barriers among immigrant parents can interfere with their ability to interact with schools in support of their children. Most immigrants are members of minority ethnic groups and, as such, are likely subject to overt and more-subtle discrimination in schools as well (Benner & Graham, 2011). Moreover, strong anti-immigration rhetoric has become more common in political debates and public discussions (García Coll & Marks, 2009).

Such factors suggest that the children of immigrants should perform poorly in U.S. schools, but that is not the case in general. In secondary school, evidence points to an immigrant paradox, in which children with immigrant parents score or rate higher than their peers with native-born parents in school completion, grade point average, test scores, and other academic factors, especially when their generally more disadvantaged socioeconomic circumstances are taken into account (Glick & White, 2003; Hao & Woo, 2012; Pong & Hao, 2007). The evidence of an immigrant paradox is less consistent at the beginning of formal schooling. In many ethnic groups, the children of immigrants enter school with less-developed math and reading skills and have lower levels of achievement in the first few years of school. Yet, as they move through elementary school, they tend to catch up and even surpass peers with native-born parents (Crosnoe, 2006; Fuller et al., 2009; Glick & Hohmann-Marriott, 2007; Han, 2008; Reardon & Galindo, 2009). Of course, these patterns vary according to ethnicity and national origin, with Asian-origin children following the paradox pattern more closely than children of Latin American origins. Moreover, the discrepancy between secondary and elementary school patterns could reflect immigration-related biases in high school samples, as older immigrants are more likely to drop out or not even enter American schools in the first place (Han, 2008; Kao, 2004; Oropesa & Landale, 2009). Still, the weight of the evidence suggests that the children of immigrants, including many from poor ethnic minority families, are doing better than expected in U.S. schools. Similar trends also seem to be occurring in other developed countries with large immigrant populations from the developing world (Washbrook, Waldfogel, Bradbury, Corak, & Ghangro, 2012).

Compared to research on ethnic, socioeconomic, and immigration-related inequality in schooling, research exploring gender inequality in schooling has been more likely to focus on social psychological phenomena. For many years, most attention was on girls' disadvantages in school, especially in math and science, which forecasted lower prospects for educational and occupational attainment in adulthood (Hyde & Kling, 2001). One of many social psychological mechanisms explored to explain these disadvantages concerned girls' perceptions that math and science classrooms were inhospitable to them (Riegle-Crumb, Farkas, & Muller, 2006). Specifically, the idea was that girls thought that they were given subtle messages that they were unwanted and, consequently, avoided such classes. Much has been made about gender

differences in attribution styles, with girls attributing success to external causes and failure to internal causes and boys much less likely to change their perceptions of their academic abilities even when confronted by seemingly objective criteria (e.g., tests, grades) to the contrary. The same stereotype threats discussed earlier for ethnicity also have been applied to gender, with girls negatively affected by their awareness of stereotypes of girls being less capable in math and science than boys even if they reject the veracity of those stereotypes (Correll, 2001; Eccles, 2004; Huguet & Regner, 2007; Riegle-Crumb & Humphries, 2012). The conclusion that can be drawn from this rich literature is that the interaction between children and their proximate environments within broader cultural contexts with gendered messages about ability, skill, and interest can keep girls from realizing their academic potential.

Interestingly, concern is now shifting from girls to boys. This shift reflects the highly publicized pattern in which girls have surpassed boys academically. Girls earn higher grades and are more likely to graduate from high school, and they have overtaken boys in all levels of higher education (Buchmann, DiPrete, & McDaniel, 2008). Even within the highly gendered areas of math and science coursework during secondary school, girls have, at the very least, pulled even with boys (Shettle et al., 2007). As a result of girls' gaining advantage, the question of how boys are disadvantaged in schools is increasingly driving research and attracting policy interest. Much of this discussion has concerned the possibility that schools (especially elementary) are organized and run in ways that are better-suited socioemotionally to girls than boys. Examples include the emphases on self-control and passive learning, which are more in line with the childhood socialization of girls to be compliant and obedient. The tendency for grades to reflect nonachievement dimensions such as behavior and effort also may benefit girls. As is often pointed out, most teachers in the K–12 system are women, a factor important to the extent that their teaching might subtly and unconsciously favor girls (DiPrete & Jennings, 2012; Jacob, 2002; Legewie & DiPrete, 2012). Critiques of the shift in attention to boys have noted the continued gender segregation of areas of study in higher education, particularly in STEM disciplines, continued disparities in standardized test performance favoring boys, and the fact that the gender reversal in educational attainment has not greatly impacted the male advantage in earnings and advancement in the labor market (Buchmann et al., 2008). The reality is that gender stratification of the educational system is strong but also quite complex, working in

different ways for different areas of schooling and varying across stages of schooling.

Ethnicity, socioeconomic status, immigration, and gender disparities are visible representations of stratification in schooling recognized as problematic and targeted by policy. Moving into the new century, other forms of inequality in schooling are increasingly recognized, such as disparities related to sexual identity, obesity, and other bases of peer victimization and discrimination (Crosnoe, 2011; Russell & Sigler-Andrews, 2003). Although we do not delve deeply into these “new” dimensions of stratification, the growth of research related to them suggests that they will garner much attention in future volumes of this *Handbook*.

### Connecting School Effects and Disparities

Theoretically grounded research on the connections between schooling and young people and disparities in schooling processes and outcomes across diverse groups of youth can be organized in two broad ways. The first concerns formal educational processes, the concrete academic functions of schooling, and their implications for students and society. The second concerns informal educational processes, the social dynamics of schools and their socioemotional implications. In the sections that follow, we review research on schooling—including but not limited to developmentally oriented research—that falls under each of these two broad umbrellas before then discussing specific ways in which the two go together.

### Schools as Educational Institutions

The educational system is a societal institution with official and unofficial tasks. We discuss the latter in the next section and the former here. The explicit publicly sanctioned mission of schools is to deliver curricula to students in order to produce a skilled workforce capable of boosting economic productivity and an informed populace able to be civically engaged. Early architects of public schooling also espoused a common school philosophy, which holds that the education of children from diverse backgrounds in the same school could reduce tensions among groups and promote social and political stability (Labaree, 1997). The formal processes of schooling refer to the concrete inputs and outputs most closely linked to this official mission of educating young people. Broadly speaking, they include aspects of school and classroom organization that structure the academic careers of young people as they develop cognitive, intellectual, and work skills and accumulate the credentials

needed to enter the labor market and participate in civil society (Arum, 2000).

### Academic Outcomes

A focus of this chapter is on how schools work as settings of young people's lives. The ultimate barometer of how well they work is how they affect children's development in the present and future. Thus, before deconstructing schools as settings, some discussion of the outcomes influenced by such setting characteristics is in order. Given that this section of the chapter highlights the formal processes of schools as educational institutions, an overview of some key academic outcomes is a good place to start. The running theme is that these outcomes reflect the interplay of child and environment over time.

First, *learning* refers to the accumulation of cognitive and academic skills, or the gradual mastery of academic materials. Learning requires appropriate cognitive and intellectual capacities for handling the materials and tasks at hand as well as the commensurate effort, not to mention the skills and investment of the teacher or any other person guiding the learning activity (Connor, Morrison, & Katch, 2004; Pianta, Belsky, Houts, Morrison, & the NICHD Early Child Care Research Network, 2007; Siegler, Thompson, & Schneider, 2011). Learning is most often measured by scores on standardized tests. Although the stand-alone value of standardized tests can and should be debated, these tests provide a straightforward way of comparing students across diverse contexts as well as over time. As a result, they are a central focus of educational research and policy, as exemplified by the testing focus of the federal No Child Left Behind (NCLB) legislation (Darling-Hammond, 2006).

The National Assessment of Educational Progress (NAEP)—often referred to as the nation's report card—is a periodic nationally representative administration of tests to gauge learning in basic fields (e.g., math, science, reading) in specific grades. It allows tracking of test score performance among American children and youth over time as well as state-by-state comparisons. The over-time trends, for example, have shown improvement in basic academic skills for children over the last several decades, but less so for adolescents. State comparisons have been used to show that the assessments developed by individual states to meet NCLB assessment requirements vary widely in quality and rigor, as states with similar accountability ratings from NCLB often differ greatly in NAEP performance (National Center for Education Statistics, 2005, 2009). More globally, the Programme for

Individual Student Assessment (PISA) is a standardized test for adolescents in basic subjects, administered by the Organisation of Economic Co-operation and Development (OECD) across multiple countries. PISA results have shown that the United States has a mediocre ranking and, as a result, have spurred much talk about school reform in the United States (Peterson, Woessmann, Hanushek, & Lastra-Anadón, 2011). Finally, one of the most prominent standardized assessments of learning at the secondary level is the Scholastic Aptitude Test, a “gatekeeper” in college admissions in the United States (Ceci, Williams, & Barnett, 2009). Overall, achievement tests gauge where children and youth stand relative to others in the K–12 system in terms of their learning—school readiness on entry into the system, preparedness for higher education or work at the end of the system, and general progress at all points in between.

Second, *graded achievement* is closely related to learning but is broader in scope. It reflects mastery of tasks and materials but also other student and teacher considerations. As a result, it may not align with test scores, although the two are correlated. The value of test scores is that they support comparisons across diverse schools, whereas the value of grades is that they tap into success within a particular school environment. Grade point averages among U.S. students have risen in a more dramatic fashion than test scores, suggesting a change in the norms of grading not reflected in actual instruction and learning (Kelly, 2008; Riegle-Crumb & Humphries, 2012; U.S. Department of Education, 2005). High grades are tied to not only meeting teachers' expectations for academic behaviors and attitudes but also how much effort they exert in meeting these expectations. High grades also are influenced by nonacademic behaviors, with compliant, attentive, engaged, and warm students evaluated by teachers more positively than others (Johnson, McGue, & Iacono, 2005; Pace, 2003; Trautwein, Lüdtke, Marsh, Köller, & Baumert, 2006).

Because grades have a subjective element, they can be responsive to aspects of student-teacher relationships, such as ethnic- or gender matching. A seminal study by Alexander, Entwisle, and Thompson (1987) revealed how middle-class teachers were more likely to give poor minority students low marks than in other teacher-student dyads. Some experimental studies, however, have provided evidence of a positive bias, in which European American teachers are more likely to downplay poor work among minority students by offering greater praise and fewer critiques (Harber et al., 2012). Immigrant students' work habits are also more likely to be rated positively by teachers

than those of their native peers, differences in teacher perceptions that could affect grades (Crosnoe, 2006). Despite these potential behavioral and demographic biases, grades are a widely recognized, interpretable dimension of academic progress, and, importantly, they and closely related factors (e.g., class rank) predict college enrollment and persistence as well as labor market entry into adulthood (Alon & Tienda, 2007; Rosenbaum & Kariya, 1991; Zwick & Sklar, 2005).

Third, *coursework* is a marker of academic progress in secondary school. It is akin to tracking in the elementary and secondary school grades—in which students are placed in classes of specialized curricula and instruction based on perceived ability—in that it denotes position within an academic hierarchy and exposure to challenging material. Much has been written about tracking and ability grouping and their relations with student background on one hand and achievement on the other (Eccles & Roeser, 2011; Gamoran, 2011; Liem, Marsh, Martin, McInerney, & Yeung, 2012). Secondary school coursework is somewhat different. Technically, it is more voluntary, as students enroll (vs. being assigned), some courses are optional (i.e., can be taken as electives), and a much broader menu of courses is available. Moreover, courses are vertically hierarchical (i.e., building on each other from grade to grade in a sequence) in ways that make secondary coursework pathways more cumulative. In other words, any academic or nonacademic factor that influences course enrollment in any one year can have cascading effects. Unlike grades or test scores, the number of seats in classes is a finite commodity, so that coursework is a source of competition. Consequently, coursework is not only based on the skills and interests of youth but also the skills and interests of their schoolmates as a whole, which then set course offerings in a school as well as who is attempting to select into any given course. The combination of uncertainty about available options, limited supply, and the cumulative nature of coursework contributes to increasing ethnic and socioeconomic disparities over the course of high school (Crosnoe & Huston, 2007; McFarland, 2006; Morgan, 2005).

One example of the cumulative stratifying nature of secondary school coursework is math. Evidence from national studies has revealed a fairly standardized sequence of math course-taking in U.S. middle and high schools, with a hierarchy of courses from less to more advanced. Roughly, this sequence is: general math, pre-algebra, algebra, geometry, algebra II, advanced math (e.g., statistics), precalculus, and calculus. In most states, high school students are required to take 3 years of math, which can be accomplished by

taking low- to medium-range courses (e.g., algebra I, geometry). The students who go beyond minimum requirements to take more demanding courses (e.g., calculus) are accruing more tangibly elite academic credentials while also developing more advanced skills. These credentials and skills then increase the likelihood of college matriculation and persistence, which is why they engender a great deal of competition within the student body (Adelman, 2006; Riegle-Crumb & King, 2010; Schneider, Kirst, & Hess, 2003). Coursework in math, science, and other areas, therefore, reflects and supports achievement and is a marker of both engagement and inequality.

Fourth, *attainment*—how much education one ultimately accrues—is the most basic summary measure of the educational career. Although a crude measure, the number of years in school is a commonly used metric of attainment with a surprisingly robust power to predict long-term outcomes in a variety of domains from occupational attainment to health and mortality (Hauser & Koenig, 2011; Mirowsky & Ross, 2003). A finer-grained approach to educational attainment considers the actual degrees attained; for example, a high school diploma, bachelor's degree, or advanced degree (e.g., master's, doctorate). Degrees are concrete markers that signify to others, such as potential employers and even prospective mates and spouses, perceived differences in skill, competence, and value. Thus, degree attainment can differentiate two individuals who have the same years of schooling and even the same skill level. The earnings premium of a college degree compared to a high school diploma discussed earlier is an example of the importance of degree attainment (Attewell & Domina, 2011; Goldin & Katz, 2008; Warren, Grodsky, & Lee, 2008).

One key dimension of educational attainment is high school dropout. Historically, dropout has been one of the most oft-studied markers of student performance, given its connection to student background as well as the long-term disadvantages that dropouts face (Rumberger, 1987). Furthermore, it is often used as a marker of school performance, especially in light of NCLB requirements that hold schools accountable for their graduation rates and recognize the “push” role of schools in some students exiting the system without a diploma (Jimerson, Reschly, & Hess, 2008). Evidence suggests that dropout is best thought of as a trajectory or sequence, with many personal, family, school, and other factors coming together over time to influence the actual dropout event. Effective prevention tends to recognize how this process works (Bloom, 2010; Finn & Zimmer, 2012).



Fifth, in contrast to the concrete indicators of academic progress discussed so far—indicators that come with fairly straightforward definitions and standard measurement strategies—*engagement* is a more psychosocial process, one that underlies these other indicators. Engagement is a broad term that encompasses many dimensions of how much students are connected to the processes and contexts of education (Newmann, Wehlage, & Lamborn, 1992). Young people can be behaviorally engaged in school, meaning that they are active participants in school and classroom activities, from signing up for school clubs to taking part in discussions with teachers and fellows students in class. They can be emotionally engaged, meaning that they have positive feelings about schooling. Such feelings can be about their schools (e.g., feeling a sense of belonging at school and acceptance by school peers) or about education more broadly (e.g., valuing education in and of itself). Cognitive engagement refers to the extent to which youth are willing to invest the time and energy needed for academic challenges (Fredricks, Blumenfeld, & Paris, 2004).

Academic achievement and educational attainment are assumed to be predicated on student engagement, in its varied forms, and problematic schooling outcomes (e.g., dropping out) are assumed to arise from disengagement. Thus, engagement is often a major part of discussions about how to intervene in the educational careers of students, especially those considered to be at risk (Finn & Zimmer, 2012). Yet, as the work of Eccles and colleagues (e.g., Eccles & Wigfield, 2002) has shown, the links between engagement and achievement are complex. Achievement can spur engagement, just as engagement lays the groundwork for achievement. Moreover, both arise from the interaction between students' own capacities, skills, and psychological orientations (e.g., motivation) with the norms, processes, and characteristics of their school contexts. Students are engaged when the tasks that they are charged with undertaking in their schools and classrooms are a good fit with their own abilities, values, goals, and expectations. The key is for students to be challenged enough to maintain their interest but not so much that they see these challenges as hopeless (Eccles & Wigfield, 2002). In this way, their approach to engagement aligns with the concept of flow, or the phenomenon in which individuals become completely absorbed in a task that offers just the right amount of challenge (Csikszentmihalyi & Schneider, 2000).

With these student outcomes most commonly linked to the formal processes of schooling having now been

described, we turn to the types of school settings that tend to promote the most positive outcomes. In doing so, special attention is paid to theoretically meaningful aspects of school context that also have a history as targets of policy intervention.

### School Structure

Structure refers to the physical and organizational setup of schools, including school and classroom size and sector (e.g., private, public). The structural characteristics of schools often have been viewed as the aspects of school context most amenable to external manipulation. The ways that schools are organized can be straightforwardly changed, albeit not always easily so. As a result, these school features represent a starting point for intervention, especially large-scale educational reforms. This applied importance of school structure has generated more theoretically oriented research attempting to understand why it matters to youth (J. S. Coleman, 1990).

Almost five decades ago, the Coleman Report (J. S. Coleman et al., 1966) generated an enormous amount of debate about school structures with its claim that the structure and funding of schools mattered less to achievement rates and ethnic disparities in those rates than the general culture of schools. This conclusion was repeatedly deconstructed by subsequent studies correcting some of the methodological limitations of the report, even some studies that used the same data but produced different results (Konstantopoulos & Borman, 2011). In short, the basic ways that schools are organized (and funded) matters to young people's outcomes, both directly and indirectly through climate and culture.

School and class size are two structural components of schools that have received a great deal of attention. These factors tap into important theoretical discussions about belongingness and also provide policymakers a concrete lever for intervention in the form of manipulating student enrollment and student-teacher ratios (Fouts, Baker, Brown, & Riley, 2006). In both theory and policy, *school size* has had a curious history, with support and action alternating between two camps. For many years, the economic organizational argument held sway. It contended that larger schools are desirable because they increase organizational efficiency and enable economies of scale. In short, large schools can pool resources, cut costs, and offer a more diverse curriculum than small schools. This argument supported school reforms like the consolidation of smaller schools into larger ones. Over time, an

ecological argument gained traction. It contended that small schools allow for a more personalized educational environment and greater sense of security by promoting connections among students and staff. They also enable a common curriculum that reduces educational disparities. This argument supported efforts to reduce school size and carve up large schools into schools-within-schools or academies. A middle ground has now been staked out in which medium-sized schools (e.g., 600–900 students) are viewed as balancing the economic efficiency of large schools with the social cohesion of small schools (V. E. Lee & Smith, 1997; Ready, Lee, & Welner, 2004).

Throughout this school size debate, the actual evidence for or against any one side has been mixed. Although some studies have shown that changes in school size are associated with changes in academic outcomes, these observed effects have been inconsistent, and large-scale policy efforts targeting school size (e.g., the Gates Foundation; see Fouts et al., 2006) have declined. Explanations for the lack of consistent success in the school size arena touch on numerous issues, including the tendency for even reduced-sized schools to remain large and findings that school size is not strongly implicated in actual classroom instruction (Iatarola, Schwartz, Stiefel, & Chellman, 2008; Supovitz, 2002). Perhaps the narrow focus on achievement (especially test scores) in discussions of school size also matters. Evidence of school size effects on a broader array of student outcomes, especially socioemotional adjustment, tends to be more positive and consistent. For example, youth have stronger attachments to school, participate in more school activities, and experience less isolation and peer victimization as school size decreases (Crosnoe, Johnson, & Elder, 2004b; Gottfredson & DiPrieto, 2011). Thus, school size may be a more important factor when discussing schools as developmental contexts, which we do shortly, than as educational institutions, which is our focus here.

*Class size* is related to but different from school size. After all, even large schools can have small classes if they have the necessary teacher capacity to staff more classes, and even small schools can have large classes if they do not. Over the years, class size has gained more attention, reflecting that classrooms are the most proximate sites of instruction. This attention has also been fueled by Project STAR (Student-Teacher Achievement Ratio). This randomized control trial in Tennessee revealed that reductions in elementary school class sizes led to moderate increases in achievement that, in the long run, brought significant returns to the initial investment (Mosteller,

1995; Nye, Hedges, & Konstantopoulos, 2000). Moreover, achievement gains increased with the number of years that children experienced smaller classes, indicating a cumulative learning boost from low student-teacher ratios over time (Finn, Gerber, & Boyd-Zaharias, 2005). Many socioemotional mechanisms often discussed in the school size debate are likely at work in observed effects of class size reduction, but the link between student-teacher ratio and classroom instruction also matters. Standardized assessments of elementary school classrooms by the NICHD Early Child Care Research Network (2004) have indicated that instruction in core subjects is of higher quality in small classrooms and that such classrooms are also characterized by more emotionally supportive interpersonal climates. Time sampling studies also have indicated that children are more active and engaged in small classrooms as opposed to larger ones (Blatchford, Bassett, & Brown, 2005). Although not entirely consistent and certainly not conclusive, the evidence suggests that small classrooms might be more positive learning environments for children. Less is known about how these patterns apply to adolescents in secondary school.

School and class size issues are often implicated in research on *school sector*, which refers to whether a school is private or public, with the former generally being smaller and having lower student-teacher ratios than the latter (Coleman & Hoffer, 1987). These features of private schools—along with their greater and more flexible funding, higher-quality teaching, less curricular differentiation, and other factors—are often used to explain why their levels of academic achievement are higher than public schools. This achievement difference, which extends well beyond the United States, is often cited as evidence of the need for voucher programs and methods of school choice that we discuss in a later section of this chapter (Dronkers & Robert, 2008; Lubienski, Weitzel, & Lubienski, 2009).

Of particular importance in such school sector comparisons is the subset of private schools operated by the Catholic Church. For some time, research has shown that students do better academically in Catholic schools than in public schools or non-Catholic private schools, especially ethnic minorities and poor students (Bryk, Lee, & Holland, 1993). Yet, this evidence has often been viewed skeptically, given the strong possibility that observed Catholic school effects reflect the characteristics of students who select into Catholic schools more than the superiority of Catholic school curriculum and instruction. This “selection” or “endogeneity” problem is relevant to the larger public versus private school comparison, with evidence suggesting that

the single biggest factor in the private school advantage is the composition of the student bodies of private schools more than what actually goes on academically inside them (Hallinan & Kubitschek, 2012; V. E. Lee & Ready, 2009; Morgan, 2001). Efforts to address such selection biases have suggested that at least some portion of the Catholic school effect is real, especially for the students who are least likely to be selecting into Catholic schools in the first place; in other words, a student-by-school interaction (Morgan, 2001). Whatever formal advantages Catholic schools have is likely rooted in their more constrained curriculum. In Catholic schools, all students typically take the same kinds of classes, are exposed to more challenging curricula, and receive higher-quality instruction than in the public schools (Carbonaro & Covay, 2010).

Related to the issue of school sector is the *school choice* debate. Choice refers to many issues subsumed under the general umbrella of “free market” approaches to schooling in the United States. The argument is that giving families more choice in where to send their children for school creates competition that ultimately improves the quality of public schools overall while also promoting the achievement of individual students, especially those from more disadvantaged backgrounds (DeLuca & Dayton, 2009).

Magnet schools, in which districts lift attendance restrictions and create specialized schools for applied entry, were the first wave of school choice. One school in a district might be focused on math and science and another focused on the arts, and students would have some latitude about which to attend. For the most part, magnet policies have not had consistent or large effects on student achievement, although they have helped to create more diverse student bodies by encouraging European American students to enroll in the predominantly minority schools where magnets are often purposely situated (Archbald, 2004; Smrekar, 2009). Attention has shifted toward voucher programs, in which low-income families or families served by low-performing schools are given vouchers to attend private schools. Vouchers have been hotly debated, seen by some as a means of spurring innovation in schools by creating outside competition and by others as a threat to public schools by siphoning off funding that could be used to improve them. Evaluations have generally revealed mixed results for academic outcomes (Cowen, Fleming, Witte, & Wolf, 2012; Hess & McGuinn, 2002). Charter elements represent a third aspect of school choice. Charter schools are publicly funded but freed from many regulatory constraints so that they can test potentially innovative approaches to schooling.

Again, although some charter schools (e.g., Knowledge is Power Program, or KIPP schools) have been high-profile successes, the overall impact of charter schools on formal educational outcomes has been highly variable (Angrist, Dynarski, Kane, Pathak, & Walters, 2010; Lubienski, 2003; Renzulli & Roscigno, 2005).

Overall, the sense of disconnect between the strong arguments advocating for various elements of school choice and the results of choice programs could reflect several factors. The achievement benefits of choice might be concentrated within specific segments of the population, defined by family background or student ability, rather than distributed more broadly (Bitler, Domina, & Penner, 2012). Student and teacher satisfaction and turnover also need to be taken into account (Cowen et al., 2012; Renzulli & Roscigno, 2005). Choice programs are often flashpoints of conflict and are deeply influenced by broader stratification processes in society. Ethnic and socioeconomic compositions of schools, for example, are often unspoken but powerful forces in how parents choose schools (Renzulli & Evans, 2005). In this way, school choice leads to the next general dimension of formal school organization: who attends a school, not just how that school is structured.

### School Composition

With whom a child attends school matters a great deal. Perhaps the most important factor is simply whether fellow students are academically oriented and high achieving, but the issue of school composition is much broader than those academic considerations alone (Hoxby & Weingarth, 2005). Going back to the common school philosophy, composition also taps into which kinds of groups are mixed together in schools. This sociodemographic dimension of school composition goes beyond matters of social justice to be relevant to the academic outcomes of individual students. In other words, its significance is not just about issues of equity and equality on the societal level but also about how individual youth learn. This aspect of school composition also speaks to important theoretical issues about peer influence and social context and underlies many contentious educational policy issues (Crosnoe, 2009; Hallinan & Kubitschek, 2012).

The *ethnic composition* of public schools has long been a source of conflict and focus of research. Worth stressing is that the common school philosophy driving the creation of public schooling in the United States did not extend to ethnic diversity. Indeed, early on, African Americans were barred from schools, and later on they were barred from

attending schools with European Americans (Labaree, 1997). Yet, ethnicity has been the dominant storyline of discussions of school composition for the past century. In terms of educational policy, two landmark Supreme Court cases serve as major historical markers. First, the 1954 *Brown v. Board of Education* decision ruled that ethnically segregated schools violated the Equal Protection clause of the U.S. Constitution, leading to decades of contentious policy actions to desegregate public schools. Such actions had a major impact on the diversity of public schools' student bodies, but, over time, schools have become more segregated again (Orfield & Lee, 2007). This "resegregation" results from a variety of forces, notably the movement of European Americans into suburban areas (Cottrol, Diamond, & Ware, 2003; Reardon et al., 2012). Second, the 2007 *Parents Involved* decision curtailed the consideration of ethnicity in the assignment of students to public schools, narrowly interpreting the appropriate circumstances for ethnicity to be taken into account and effectively ending large-scale programs of desegregation (Bazelon, 2008).

The reasons that these court cases and related policy actions are so important are evident in major themes of research on school composition. Ethnically segregated schools are problematic for instruction and learning, not only for ethnic minority youth but also European American youth (Schofield, 1995). On the most basic level is the fallacy of the separate-but-equal argument that ethnically segregated schooling is acceptable if the schools exclusively serving different groups are otherwise equal. In reality, segregated schools are not otherwise equal. In terms of curriculum, teaching, resources, and other formal processes, schools serving predominantly ethnic minority populations are well below schools serving predominantly European American populations. In this way, the ethnic composition of a school, beyond its socioeconomic composition, is a marker of opportunity, putting ethnic minority students at a learning disadvantage that has little to do with merit (Lleras, 2008).

Yet, the disadvantages of segregated schools are not just confined to organizational and curricular resources and are not solely experienced by minority youth. To the extent that ethnic diversity itself, regardless of resources, supports cognitive development and learning, then European American students also may be disadvantaged by attending segregated schools. The link between diversity and learning is rooted in developmental theory. For example, Piaget's (1983) concept of disequilibrium contends that intellectual capacities are enriched by encountering and then working

through contradictions and discrepancies in everyday life. In this sense, being exposed to diverse worldviews and life perspectives and sorting through knowledge about a range of life experiences provides opportunities to exercise cognitive capacities (P. Y. Gurin, Dey, Gurin, & Hurtado, 2003). This argument is directly relevant to school ethnic composition, in that diverse schools will provide more opportunities for such cognitive exercise. Indeed, studies indicate that students in diverse colleges have more experience critically analyzing their own assumptions about the world and their own lives than students in less diverse colleges and, as a result, are more engaged in the learning process and do better academically (P. Gurin, Dey, Hurtado, & Gurin, 2002). These benefits extend across ethnic groups but may be stronger among European Americans, who have far less exposure to diversity outside of school than ethnic minority youth. Studies of children attending diverse elementary schools echo these basic patterns (Benner & Crosnoe, 2011).

In this light, the resegregation of American schools presents new challenges about how to ensure equal learning opportunities for children and youth from different groups. These challenges are made even more complex by findings that the learning benefits of school ethnic diversity may come with socioemotional risks that undermine those learning benefits, such as less connectedness and belonging to school. In other words, the link between school ethnic composition and youth outcomes may differ when schools are approached as educational institutions or as developmental contexts. Consequently, we return to the topic of school ethnic composition in the section of this chapter that focuses on the intersection of formal and informal processes of schooling.

The *Parents Involved* ruling has helped to fuel the gradual shift in educational policy and school composition research from ethnic composition to *socioeconomic composition* (Clotfelter, Ladd, & Vigdor, 2005; Reardon, Yun, & Kurlaender, 2006). The same arguments about opportunity and the value of diversity in discussions of ethnic composition apply to socioeconomic composition. Moreover, much of the impact of ethnic composition on students is actually a result of socioeconomic composition, given the strong correlation between ethnic stratification and socioeconomic stratification in the United States. Thus, increasing socioeconomic diversity in schools could help to equalize opportunities to learn through many of the same processes discussed earlier for ethnic diversity, while still abiding by the *Parents Involved* decision and avoiding much of the contentiousness surrounding matters



of ethnicity in schools. Doing so would directly target the socioeconomic achievement gap, which is important in its own right, while indirectly targeting the ethnic achievement gap. This argument, which was highlighted in Parents Involved, has supported socioeconomic desegregation plans in multiple locales in the United States (Grant, 2009; Kahlenberg, 2001; Rothstein, 2004).

The socioeconomic composition of schools appears to be related to formal academic outcomes. In the United States as well as in other developed countries, students tend to test higher when exposed to more socioeconomically diverse peers at school. This pattern is most likely to be found in the case of children from low-income families attending schools with greater concentrations of middle-class students (Lee, Smith, & Croninger, 1997; Perry & McConney, 2010; Rumberger & Palardy, 2005; Willms, 2010). Part of this relation is due to the higher quality curricula and instruction, lower levels of teacher and student mobility, and broader extracurricular programs that children from socioeconomically disadvantaged families are exposed to in socioeconomically advantaged schools. It also reflects the supportive, entitled, and powerful parent and community networks that form around such schools, which have benefits that trickle down to all students regardless of their own socioeconomic circumstances (Coleman & Hoffer, 1987; Kahlenberg, 2001; Mayer, 2002). Much of the observed link between academics and school socioeconomic composition is interpreted through the lens of peer influence, highlighting how children from socioeconomically disadvantaged backgrounds can access academically valuable information, assistance, and role models by attending school with middle-class peers, whether or not they are friends with these peers (Crosnoe, 2009).

Selection biases, which we discussed in relation to school sector, are also relevant to understanding the apparent effects of school socioeconomic composition on the young people's academic outcomes. After all, given how socioeconomically segregated American schools are (Reardon et al., 2006), a child from a low-income family who attends a predominantly middle-class school is likely to be different than other children from low-income families in many ways. She or he may be intellectually or athletically gifted or have especially involved and agentic parents. Such qualities would then also lead to more positive academic outcomes regardless of school location. Because most of the evidence for school socioeconomic composition effects comes from survey data in national or community samples, selection biases have not been effectively ruled out, although the implementation of school desegregation

plans offers quasiexperimental opportunities that suggest that at least some of these effects are causal (Crosnoe, 2009; Plank, 2000). Another issue is that, like ethnic composition, some apparent risks arise when looking at school socioeconomic composition with an eye toward socioemotional functioning rather than academic achievement. This potentially offsetting nature of formal and informal processes in school composition will be discussed later in this chapter.

Ethnicity and socioeconomic status have dominated research and policy related to school composition for decades, but they are not the only dimensions of school composition that have gained the attention of researchers and policymakers. One increasingly prominent dimension concerns gender, either the creation of *single-sex* schools or creating single-sex classrooms within coeducational schools. Of course, private schools have long offered single-sex environments, but Title IX and later federal regulations gave states more freedom to experiment with such environments in the public school arena (Billger, 2009; Salomone, 2006). The arguments for single-sex schooling are rooted in concerns about the ways in which girls may be frozen out of academic opportunities based on lingering sexism among peers, parents, and teachers. They also reflect newer ideas about gender differences in learning driven by contemporary concerns about boys' underachievement in school relative to girls (Halpern et al., 2011). Some evidence suggests that single-sex (versus coeducational) schooling has positive effects, for example, in terms of girls' attitudes about math and science. Yet, other studies do not. Overall, the soundness of the evidence base (e.g., the degree to which observed effects are indeed causal) has been hotly debated in the United States and internationally (Billger, 2009; OECD, 2009; Shapka & Keating, 2003; U.S. Department of Education, 2005). Furthermore, critics have argued that single-sex schooling actually may be harmful, in that it could reify gendered ideas about learning and achievement and leave youth ill-prepared to function in a decidedly coeducational world (Halpern et al., 2011). The conflict over single-sex schooling is likely to intensify in the years to come.

### Curriculum and Instruction

Beyond the ways that schools are structured and who attends schools is the most fundamental formal activity of schools: instruction. Thus, one crucial way to characterize schools and to differentiate among schools is how classroom instruction is organized, in terms of packages of

instructional activities across classrooms (the curriculum) as well as student-teacher interactions within classrooms.

Issues of tracking and curricular differentiation already have been introduced in this chapter. Here, we focus on a specific dimension of these issues: the degree to which classes and courses are cognitively and intellectually challenging for young people. As already noted, many developmental perspectives on learning and achievement emphasize how *challenging coursework*—within realistic parameters—is an integral component of learning (Csikszentmihalyi & Schneider, 2000; Eccles & Wigfield, 2002). Indeed, youth tend to learn more and exert more effort in classes that cognitively challenge them, and schools in which the curriculum includes more academically advanced courses tend to have higher achievement levels and lower dropout rates (Carbonaro, 2005; V. E. Lee & Burkam, 2003). Such patterns have been used to argue for a reduction in tracking and curricular differentiation in the United States and other countries. In an effort to tailor instruction and materials to the abilities of individual children, such practices often result in children perceived to be lower in ability receiving watered-down curricula that do not challenge them and ultimately lead to lower levels of learning (Lucas & Berends, 2002; Montt, 2011). This stratification of opportunities to learn by real or perceived aptitude points to the potential value of detracking (i.e., mixing students of differing abilities in the same classrooms) and creating a common curriculum (i.e., all students taking the same classes or kinds of classes). Such educational approaches—often seen in Catholic schools—are thought to even out differences across classes that are based on often artificial assessments of what students are capable of doing. In secondary school, these educational approaches are aimed at reducing socioeconomic and demographic disparities in who takes advanced coursework that is optional (Hallinan & Kubitschek, 2012; Loveless, 1999).

Theoretical recognition of and empirical evidence for the benefits of reducing curricular differentiation have resulted in policy action. *Curricular intensification* refers to the push to have more secondary school students enroll in higher-level coursework and persist further in their coursework, major foci of the federal Gear Up program aiming to increase the academic preparedness of students from low-income families for college (U.S. Department of Education, 2012). In effect, intensification aims to create a higher standard for course-taking that applies more consistently across students; for example, increasing required math coursework in all years of high school or making biology a required science class for all incoming

students in a high school rather than allowing students to choose between biology and other less challenging courses (Kelly & Carbonaro, 2012). In line with insights from the expectancy-value and flow models, challenging coursework seems to increase learning. Rather than being discouraged, students tend to rise to the challenge and even are energized by it. In other words, students who may be perceived as unsuited for taking algebra often do well when forced through policy to do so, posting greater gains in mathematical knowledge over time (Attewell & Domina, 2008; V. E. Lee & Ready, 2009).

Such seemingly encouraging patterns also come with caveats. For example, a historical analysis of national data revealed that the trend toward curricular intensification in secondary schools was associated with narrowing socioeconomic and ethnic achievement gaps. Yet, this same analysis indicated that this pattern did not apply to the most advanced courses (e.g., calculus), lending credence to theoretical arguments that intensification might simply change the way that inequality is manifested rather than eliminate it (Domina & Saldana, 2012; Lucas & Berends, 2002). As another example, evidence from the NICHD Study of Early Child Care and Youth Development—which included observational protocols of elementary classroom practices—suggested that cognitively challenging math classes promoted achievement for lower-skilled children but only in the context of emotionally supportive student-teacher relationships. When such challenges came in less emotionally supportive classrooms, these children achieved less than they would have in less challenging classes (Crosnoe et al., 2010). Importantly, analyses of the implementation of intensification policies (e.g., in Chicago public schools) have yielded more disappointing evidence than analyses of survey data, suggesting that selection biases may be inflating the value of this practice (V. E. Lee & Ready, 2009). The issues around curricular intensification illustrate how the translation between theory and practice is sometimes quite uneven.

The emphasis on academic coursework in the intensification push is, in practical terms, at cross-purposes with *vocational training*. In many European countries (e.g., Germany), vocational education and academic education are complementary paths. Such systems have distinct branch points, in which, after a certain number of years, young people select or are selected into either vocational or academic schools. Having such branch points makes clearer what the options are for students, but it also concentrates socioeconomic and other inequalities in very specific periods. The same is not true in the United States, where no

explicit branching between vocational and academic education occurs. As a result, the relative value of vocational versus academic education is harder to discern, vocational opportunities are less readily available, and inequalities are more diffusely distributed across the educational career (Buchmann & Park, 2009). In the United States, vocational education in secondary school increases the risk of dropping out, reduces the likelihood of attending college, and depresses achievement. At the same time, it does not consistently improve labor market outcomes, especially for youth from traditionally disadvantaged groups (Ainsworth & Roscigno, 2005). Thus, in the push for curricular intensification and the broader “college for all” atmosphere in the United States (e.g., Rosenbaum, 2001; the Obama administration’s American Graduation Initiative, 2009), what happens to youth not well suited to or interested in higher education or who want to directly enter the labor force is not given enough attention.

Of course, one consideration for this line of research is not so much the curriculum itself but who is delivering it to students; in other words, *teacher effectiveness*. In the policy world, the role of teachers in student learning has been hotly contested, especially in the context of issues like teacher unions and teacher tenure. In the research world, what is not contested is that having a “good” teacher is one of the most important factors in children’s educational success (Darling-Hammond, 2006; Konstantopoulos, 2011).

Partly, teacher quality concerns what and how teachers teach specific materials. For example, different teaching methods have been associated with greater growth in reading and math skills. In reading, debates about phonics learning (teaching the relation between spoken words and written letters) versus whole language learning (teaching to infer words and their meaning from context) have raged for years (Armbruster, Lehr, & Osborn, 2001; Sonnenschein, Stapleton, & Benson 2010; Xue & Meisels, 2004). Yet, this dichotomy is likely false. Children tend to learn reading more quickly through a mixture of the two approaches or, more generally, when they gradually transition from a more basic-skills instructional approach into more of a higher-order approach, especially in socioemotionally supportive contexts (J. L. Brown, Jones, LaRusso, & Aber, 2010; Connor et al., 2004). Such patterns suggest that what matters is tailoring instruction to the needs and skills of individual children. This conceptual framework is often referred to as the child  $\times$  instruction approach (Connor et al., 2009). It is not limited to reading. In math, developmentally oriented approaches recognize the cumulative nature of learning beginning with fundamental basic skills

(e.g., understanding numerical magnitude) that then are built on over time and emphasize how math instruction is facilitated by more socioemotionally supportive teaching styles (Booth & Siegler, 2008; Burchinal et al., 2011; Duncan et al., 2007; Siegler et al., 2011). Still, although the child  $\times$  instruction approach is theoretically validated, it can be hard to implement in practice, as it demands more time and attention from teachers. For example, one survey revealed that nearly half of elementary school teachers made no adjustments for individual students in their approach to teaching spelling (Graham et al., 2008).

Other aspects of what makes a good teacher are difficult to isolate. Value-added assessments—in which the achievement gains of students are measured during their time with specific teachers—have revealed that some teachers have strong influences on student learning and others do not, but they have not consistently indicated what policy-amenable factors identify the former or latter. For example, years of teaching experience, advanced credentials, and certification are concrete characteristics of teachers that could be supported through policy. Although some studies suggest that these factors are related to student learning, others do not and instead emphasize attitudes and personal characteristics (e.g., efficacy, expectations) that are more difficult to manipulate (Goldhaber & Anthony, 2007; Hanushek, 1997; Palardy & Rumberger, 2008; Wenglinsky, 2000). In other words, teachers matter a great deal, but which teachers matter is still uncertain.

## SCHOOLS AS DEVELOPMENTAL CONTEXTS

Although schools’ central mission revolves around teaching and learning, schools are also developmental contexts that promote (or not) well-being across developmental domains. Schools encompass a web of personal relationships between and among students, school personnel, and parents. Such relationships and how students consider and connect to others in their schools more broadly influence academic success and have implications for students’ social and emotional development as they move through the educational pipeline. Thus, just as the structure and composition of schools and the curricula and instruction implemented within them can support students’ educational success or derail educational trajectories, so too can relationships within and connections to schools. Such relationships also matter in ways that extend far beyond this narrow educational lens (see Wigfield et al., Chapter 16, this *Handbook*, Volume 3).

The fundamental components of this informal side of schooling are relationships. Given the structure of K–12 schooling in the United States, students are constantly establishing new ties to teachers on an annual basis across elementary school and often a semesterly basis across secondary school. Although relationships with peers may be more consistent than those with teachers, school moves and transitions can disrupt peer networks as children and adolescents are thrust into new and often larger and more impersonal school environments (see Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*, this volume). Similarly, as students move through the educational system, family-school connections are forged, maintained, and lost, and the role of the student in these family-school connections evolves. Despite the ever-changing nature of the set of relationships that form in and around school, these relationships consistently play a key role in child and adolescent development. In the section that follows, we consider three primary sets of relationships—relationships with teachers, relationships with peers, and family-school connections—and how each drives students' academic performance. We also discuss other components of the developmental contexts of schools that are shaped by or involve these relationships. Later in this section, we will revisit these relationships and relationship-based processes and explore how they are linked to youth's social and emotional well-being.

### Relationships in School

Great attention has been placed on the role that supportive *relationships with teachers* play in the lives of young people. Much of this research is focused on the elementary school years, which is not surprising given that, during this period children generally spend the vast majority of their school day with a single classroom teacher. In contrast, secondary schools in the United States are structured so that students generally rotate through courses and classrooms throughout the day. Consequently, students are exposed to more teachers overall, and their time with any one teacher is constrained to a single class period. Regardless of school level, however, teachers remain important socializing agents children and adolescents' lives, and student-teacher relationship quality is an important mechanism of educational success. Longitudinal work suggests that certain patterns of student-teacher relationships emerge across elementary school. Considering the two primary domains of teacher-students relationships—warmth/caring and conflict—reveals that some students have consistently

positive experiences with their teachers, others consistently rate their relationships with teachers quite negatively, and still others see improvements or declines in these relationships across time (E. O'Connor & McCartney, 2007; Spilt, Hughes, Wu, & Kwok, 2012). Our conclusion is that this work suggests that students' relationships with teachers are complex and changing, complicating scientific inquiry exploring how they might matter.

Regardless of individual experiences of teacher-student relationships, ample research suggests that elementary students receive higher teacher ratings of their language, literacy, and mathematics skills, earn higher grades, and exhibit greater school engagement when they have more positive relationships with their teachers. Here, positive refers to greater warmth and support and low levels of conflict (Hughes, Luo, Kwok, & Loyd, 2008; Maldonado-Carreño & Votruba-Drzal, 2011; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). In contrast, when children have more conflicts with their teachers, they tend to be less engaged in school and have poorer work habits (Hamre & Pianta, 2001; E. O'Connor & McCartney, 2007; Stipek & Miles, 2008). Work at the secondary level suggests similar benefits, including better grades in school, enhanced school compliance, greater motivation, and a decreased likelihood of school dropout (Croninger & Lee, 2001; Crosnoe et al., 2004a; Patrick, Ryan, & Kaplan, 2007; Wang & Eccles, 2012a). Although these within school level studies consistently highlight the advantages of strong teacher-students relationships, studies looking across the school levels and across academic domains suggest such links are more tenuous. These studies identify academic benefits of positive relationships in some domains but not others (e.g., sound awareness but not letter-word identification or applied problems; Curby, Rimm-Kaufman, & Ponitz, 2009), at certain grades (e.g., later but not earlier in elementary school; Crosnoe et al., 2010; Hamre & Pianta, 2001), or for only certain groups of students (e.g., boys, students with moderate or highly positive relationships; E. O'Connor & McCartney, 2007; Spilt et al., 2012).

Relatedly, certain aspects of the student-teacher dynamic appear to be more beneficial for specific groups of students. For example, studies show that struggling students and students with less educated mothers tend to benefit more from strong instructional support than students exhibiting less academic and social risk (Croninger & Lee, 2001; Curby et al., 2009). In contrast, initially higher-performing students and girls seem to benefit more from teachers' emotional support than initially lower-performing students and boys (Curby et al., 2009; Hamre &



Pianta, 2001). Along similar lines, student-teacher relationship quality can boost the effectiveness of instructional support. For example, Crosnoe et al. (2010) found that inference-based instructional practices lessened the achievement gap between high- and low-skilled mathematics students during elementary school but that these effects were not as strong when children and teachers had conflictual relationships.

In addition to the significant role that educators play in young people's educational lives, *peers* are also critical agents of academic socialization, particularly as students move from childhood to adolescence (see Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*, this volume). Given the prominence of peers in the efforts of adolescents to meet key developmental tasks (e.g., individuating from parents), the focus of scholarship on peer relationships during adolescence is not surprising (Ryan, 2001). This work generally finds that both the academic and social support dimensions of peer interactions contribute to educational success across secondary school.

In the academic domain, friends' academic achievement seems to be a potent predictor of adolescents' school performance. When adolescents associate with higher achieving peers, they advance further in their high school coursework, particularly when already performing well academically (Crosnoe, Riegle-Crumb, Field, Frank, & Muller, 2008). Other research suggests that such links may be conditional based on gender. Riegle-Crumb et al. (2006) observed a link between having high-performing same-sex friends and advanced course taking for girls but not boys. Having more same-sex than opposite-sex friends also promoted more advanced course taking for girls, but having more same- versus opposite-sex friends was detrimental to boys' advanced course taking. Such work follows the trend discussed earlier in this chapter toward boys' disadvantages in the educational arena.

The academic backgrounds of adolescents' friends also have repercussions for decisions to dropout. For example, Ream and Rumberger (2008) found that, when youth had more friends who had dropped out of school, they had a much higher probability of leaving school without an academic credential. Although it is a less-robust predictor, the extent to which these friends valued (or devalued) education also was linked to later school dropout. In addition to the academic characteristics of friends, the academic support these friends offer has repercussions for academic well-being. For example, when early adolescents have classmates who provide more academic support (e.g., encourage and help the student learn), they exhibit

better self-regulation and engage in more on-task academic activities with their peers (Patrick et al., 2007). Scholarship on friends' achievement and academic support, however, is complicated by the fact that friendship ties tend to reflect achievement homophily—that is, high-achieving students are more likely to nominate other high achievers as their friends, and friendship groups tend to become more academically homogenous over time (Flashman, 2012).

In addition to the academic support that peers can provide, the emotional tone of friendships and the quality of socioemotional support promotes positive school outcomes. At the most basic level, simply having friends supports academic achievement. Consistent with research documenting the socioemotional advantages to reciprocated friendships (i.e., in peer nominations, when the sender and receiver both nominate each other as close friends), middle school students with at least one reciprocated friendship earn higher grades than those students whose friendships are not reciprocated (Wentzel, Barry, & Caldwell, 2004). The emotional quality of friendships also matters. For example, Benner (2011a) found that the negative repercussions of feeling lonely at school for Latino/a adolescents' academic progress and achievement test performance were less severe when adolescents reported greater support from friends. Similarly, although extracurricular participation, school identification, and subjective valuing of learning all generally decline across secondary school, greater acceptance and emotional support from friends was associated with less severe declines in these academic outcomes (Wang & Eccles, 2012b). A more complex picture, however, emerges for school compliance, or adherence to school and classroom rules and norms, suggesting that not all peer relationships are created equal. Specifically, when adolescents primarily associate with a deviant peer group, heightened peer support leads to faster declines in school compliance across secondary school. In contrast, when adolescents associate with more prosocial peers, greater peer support is linked with more attenuated declines in school compliance (Wang & Eccles, 2012b).

Much of the work on peer influences on academic outcomes, therefore, is positive, reflecting the value of social support for meeting the challenges of school. Yet, as the work of Wang and Eccles (2012b) just described suggests, peer influences can also be negative. Because peers are such powerful agents of socialization, they can disrupt academic progress when they devalue academic success or when the social demands of peers distract from academic pursuits (Crosnoe, 2011). Indeed, the potential for peers to have negative influences on schooling has long been a

major source of debate in research and theory on ethnic and socioeconomic achievement gaps. As discussed earlier in this chapter, this line of research has moved toward a consensus that some peer dynamics can be major risks for academic factors but that these risks are not confined to any one ethnic or socioeconomic group (Harris, 2006; L. D. Steinberg et al., 1996; Tyson et al., 2005).

### Relationships Outside School

The relationships that young people have with teachers and peers are largely (although certainly not completely) anchored in schools. Of course, they also have many relationships that are more or less removed from the actual school context even if they still have implications for what goes on in that context. Parents are perhaps the best example (see Bornstein, Chapter 3, this *Handbook*, this volume). Parents influence their children directly—they are the most consistent socializing agents of young people across the early life course—while also having indirect influence through schools (L. Steinberg & Morris, 2001). Earlier we discussed how the demographic characteristics of families influence young people's performance in schools, and here we expand our focus to discuss the implications of parents' involvement and connection to schools for children's adjustment.

Parents' educational involvement and school-family connections can take many forms, but they most commonly consist of three general activities (X. Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2007). The first encompasses home-based educational involvement. Such activities occur outside the walls of the school but are explicitly implemented to reinforce school learning and promote educational engagement and academic success. Home-based involvement can include monitoring and supervision, such as limiting screen time (i.e., television, video games) and checking homework as well as academic enrichment, when parents seek out extracurricular activities and experiences that promote children's development (e.g., concerted cultivation; Lareau, 2003). The second is school-based involvement activities encompassing parents' active and visible presence in schools through volunteering in the classroom, attending parent-teacher conferences, and participating in school governance or other school-family partnerships (e.g., parent-teacher organizations). The third is academic socialization, in which parents engage in active communication about academics and the value of education and either explicitly or implicitly convey their educational aspirations and expectations

to children. Work comparing different facets of parent involvement suggests that parents engage in home-based involvement activities more frequently than school-based activities across elementary and secondary school (Green, Walker, Hoover-Dempsey, & Sandler, 2007), and longitudinal studies find that both home- and school-based parental involvement decrease from elementary through high school (Cheung & Pomerantz, 2011; Crosnoe, 2011; Green et al., 2007).

The factors that promote parents' educational involvement have been the focus of much study, including the constraints on parents' behavior and personal characteristics that affect both values and behavior. In terms of constraints, parents' work schedules can limit active involvement in school-based activities. Given the scheduling constraints associated with full-time employment, parents who work or attend school full-time unsurprisingly report the least amount of educational involvement. Yet, mothers who work or attend school part-time tend to be more involved in their children's school than those not working or attending school (Weiss et al., 2003). Other constraints related to demands on parents' time and energy due to family needs are associated with less school- and home-based involvement (Green et al., 2007). When parents face more economic stressors, they are generally less involved in school-based activities, have lower educational expectations for their children, and engage in fewer educationally oriented discussions at home. These findings are robust regardless of the marker of disadvantage being considered, such as low parent education or low family income (Hill et al., 2004; J. S. Lee & Bowen, 2006). Parents in more disadvantaged households, however, are more likely than their more advantaged counterparts to engage in activities related to managing their children's time, such as limiting television exposure or encouraging reading (J. S. Lee & Bowen, 2006).

Worth stressing is that the characteristics of students may elicit parental involvement. For example, when children performed better academically early in their educational careers, parents' educational involvement subsequently increased later in elementary school (Englund, Luckner, Whaley, & Egeland, 2004). Similarly, at the beginning of high school, academic involvement was highest for parents of students in college-preparatory academic tracks and lowest for students in remedial academic tracks. The general declines observed in parental involvement across high school, however, seemed limited to parents whose children were in college preparatory tracks (Crosnoe, 2001). These differences are echoed in work that

suggests that, when children and adolescents begin to struggle in school, parents may ramp up their involvement activities as a means of helping to get their children back on track academically (Pomerantz, Moorman, & Litwack, 2007).

Research on the consequences of parental involvement generally suggest academic benefits, although there is some evidence that not all parental involvement activities are equally effective. Lee and Bowen (2006) found that parents' school-based involvement was linked to children's academic performance in reading and mathematics during elementary school. Higher parent involvement is also associated with greater school investment, more time spent on homework, more self-regulated learning strategies, greater academic competence, and higher achievement at the end of middle school, and the more parents maintained their involvement over middle school, the more positive their children's academic outcomes were (Cheung & Pomerantz, 2011). Meta-analyses of urban elementary and secondary students identified consistently positive effects of parental school involvement for both European American and minority children in urban schools, although effect sizes were stronger at the elementary level (Jeynes, 2007). More explicit comparisons of the various parent involvement components suggest differential effects. A meta-analysis by Hill and Tyson (2009) found that parents' school-based involvement activities are stronger predictors of middle school students' achievement than home-based involvement activities, and numerous studies and meta-analyses document the particular potency of parents' aspirations and expectations for their children and adolescents' educational success (Benner & Mistry, 2007; Hill & Craft, 2003; S. Hong & Ho, 2005).

Other studies report that parents' involvement in their children's schooling does not increase educational success. Instead, this work suggest that parents' reported involvement in schools has either no effect on young people's academic achievement (El Nokali, Bachman, & Votruba-Drzal, 2010; Hill et al., 2004) or actually is associated with poorer achievement test performance (Domina, 2005). Studies using teacher reports of parents' educational involvement at home and at school have yielded similar null findings or findings only cross-sectionally for children's verbal and math skills, academic aptitude, and achievement test scores once school readiness, personal characteristics, and peer performance were taken into account (El Nokali et al., 2010; Englund et al., 2004; Kurdek & Sinclair, 2000). Reasons for these differential effects likely reflect many issues, including differences in study design. One important issue, however, is that

the observed effects of parental involvement may simply reflect the characteristics of parents who are (or are not) involved more than it does the benefits of involvement itself. In other words, unmeasured selection biases may be at work. Although the range of selection factors that might increase parental involvement while also affecting child outcomes is broad, ranging from parents' personalities up to policies, one concrete selection factor that has received a great deal of attention is parent socioeconomic status (Domina, 2005; Pomerantz et al., 2007).

Indeed, the socioeconomic circumstances of parents appear to play a critical moderating role in the academic outcomes of parental involvement, such that children who are in the most need of educational support—who generally come from more disadvantaged families with less economic, human, and social capital—tend to benefit most from parents' educational involvement. More specifically, Domina (2005) found that parent involvement activities, including PTA attendance, volunteering, and checking children's homework, were stronger predictors of the achievement of children from low- (versus high-) socioeconomic status (SES) families. Similarly, parent involvement in their children's schooling was particularly critical for the literacy development of children whose mothers had lower levels of education (Dearing, Kreider, Simpkins, & Weiss, 2006). Hill et al. (2004) observed that educational involvement was positively associated with children's educational aspirations when parents had less education, whereas involvement was unrelated to aspirations for children with more highly educated parents. Yet contrary evidence suggests that children who are in the least need of educational support—those children from more advantaged homes with greater resources—benefit most from parental involvement, particularly when it is tied to the concerted cultivation efforts of expanding children's and adolescents' academic repertoires. For example, J. S. Lee and Bowen (2006) observed that parents' educational expectations promoted achievement test scores more for children from higher-income families than for children from more economically disadvantaged homes (i.e., those children receiving free- or reduced-price lunch; FRPL). These socioeconomic patterns also appear to vary in complex ways by ethnicity (Hill & Craft, 2003; Hill et al., 2004).

### School Statutes

When discussing relationships in school, we focused a great deal on peer relationships. In doing so, we considered the ways in which young people interacted with and drew

support from their friends. These individual friendships also aggregate into much broader layers of social life, creating the basic social structure of schools—the networks of ties and relationships that organize social activities and create a status hierarchy. Where young people fit in this broader social landscape of schools is also important, not just their own individual relationships (Crosnoe, 2011).

One major component of the social structure of schools involves the large peer crowds that cut across the student body. These crowds tend to emerge in the larger and more diverse environments of secondary school as schools grow in size, curricula become more differentiated, and activities become more plentiful. In short, crowds are age- and gender-diversified identity groups of students who share the same basic image or reputation (e.g., jocks, druggies; B. B. Brown, Von Bank, & Steinberg, 2008). Crowds are often tied to aspects of school organization, such as classes, clubs, and activities, but are not necessarily so. They refer to young people who share the same basic “space” in school even if not all youth within a crowd are directly tied to each other, serving as pools of potential friends and romantic partners (Barber, Eccles, & Stone, 2001; Frank et al., 2008). Crowd identification and affiliation is particularly strong in early adolescence, a central time for identity development, and certain crowds afford more status than others (B. B. Brown, Eicher, & Petrie, 1986). As a result, membership in a certain crowd can convey status on individual students, even as individual students within the same crowd have different statuses both in and out of the crowd (Crosnoe, 2011).

Social status is not solely a function of peer crowds. Youth can be characterized in terms of popularity among peers, which can refer to how many other students want to hang out with or be friends with that youth or, more diffusely, how much influence they have even if they are not well-liked (Garandeau, Ahn, & Rodkin, 2011; Crosnoe, 2011). Although crowd membership is a force in popularity, other factors also matter, such as body size, physical appearance, family background, and, among adolescents, participating in a little (but not too much) risky behavior (Allen, Porter, McFarland, Marsh, & McElhaney, 2005; Crosnoe, 2011). Similarly, sexual activity can support popularity for boys and reduce it for girls (Kreager & Staff, 2009). Indeed, gender differences drive peer preferences and perceptions of social status. Girls are more likely to be nominated as popular than boys and are less likely to be rejected by peers, but girls lose out more than boys for being aggressive (Garandeau et al., 2011; Ladd, Herald-Brown, & Reiser, 2008).

Regardless of how crowd membership, popularity, status, and social preference emerge, their academic and other benefits are readily apparent, and not just during adolescence. Elementary students who are well liked by their peers espouse more positive academic and social self-concepts, and they tend to score higher on global self-worth measures. Peer social preference and popularity, however, do not seem to be strongly linked to teacher ratings of students’ academic performance and students’ grades (Gest, Domitrovich, & Welsh, 2005; Schwartz, Gorman, Nakamoto, & McKay, 2006), which is not surprising given that popularity is more tied to social rather than academic intelligence (Meijs, Cillessen, Scholte, Segers, & Spijkerman, 2010). Popularity and social preference also have been found to exert differential effects on school engagement—whereas increases in popularity are linked to greater school absenteeism, improvements in social preference (i.e., want to be friends with someone) are linked to better attendance (Schwartz et al., 2006). At the other end of the spectrum, experiences of peer rejection can be quite detrimental for young people’s educational success. Students who are less accepted by their peers subsequently earn poorer grades and express poorer academic self-concept (Flook, Repetti, & Ullman, 2005). Similarly, experiences of rejection seem to fluctuate conjointly with students’ academic engagement. When students experience heightened or chronic rejection, they are less involved in classroom activities and are less able to work independently. In contrast, when rejection levels decline, classroom involvement and independent work efforts improve (Ladd et al., 2008).

In adolescence, social status and academic progress are also related. On one hand, being popular, being a member of popular peer crowds, and having high social status in school can support academic endeavors by increasing the pool of social support, facilitating students’ liking of school, and creating a halo effect in which behaviors and attitudes are viewed more positively by others. On the other hand, such students may have entrée to parties and other social activities, feel pressured to engage in “cool” behaviors, and devote more time and energy to physical appearance and other social considerations in ways that distract from schooling. Overall, social status is an academic benefit, but one that is suppressed somewhat by distractions that chip away at assets (Crosnoe, 2011).

### School Culture

At their core, schools are communities of students and educators who come together within the school walls to



engage in the learning process. How these groups coalesce to foster an overall school climate has received much attention, and the consensus is that school climate influences young people's development across domains (J. Cohen, McCabe, Michelli, & Pickeral, 2009). Yet, wide variation exists in exactly how to best capture and describe the climate of American schools. Guided by J. Cohen et al. (2009), our own view is that positive school climate as a multidimensional construct encompassing school belonging and connectedness, perceptions of fairness and safety, and strong interpersonal ties. Not surprisingly, research has shown these factors tend to be interconnected. For example, when students feel connected to their schools, they are also more likely to view school rules as clear and fair and their schools as safe places to be and learn (Akiba, 2010; M. T. Hallinan, 2008).

The demographic and structural characteristics of schools seem to play key roles in certain aspects of school climate. Although smaller schools are often assumed to foster more positive climates due to their more limited physical space and fewer students and educators under one roof, a multitude of studies indicate that this is not the case. In fact, research spanning elementary to high school suggests that school size has little to no effect on students' feelings of connections to their schools or their perceptions of either the fairness of school rules or the supportive nature of their schools more generally (Anderman, 2002; Fan, Williams, & Corkin, 2011; Gregory, Cornell, & Fan, 2011; Koth, Bradshaw, & Leaf, 2008). How school demographic composition plays into perceptions of school climate has received less attention, and findings are more equivocal. For example, Gregory et al. (2011) highlight correlations between attending schools with more disadvantaged peers and students' perceptions that their schools are supportive environments, but they do not find similar links for students' perceptions of fairness within school. Koth et al. (2008) similarly observe no links between school-wide levels of FRPL receipt (a marker of poverty in school) and students' perceptions of school order and discipline or the academic press of schools. In contrast, research suggests that having more same-ethnicity peers and attending schools with greater academic press promote greater connections and belonging to school (M. K. Johnson et al., 2001; Smerdon, 2002).

Student characteristics also factor into their perceptions of the school climate. For example, African American students tend to express lower levels of school belonging than their European American counterparts, and younger students tend to feel greater levels of school belonging than

their older peers (Anderman, 2002; M. K. Johnson et al., 2001). Research in the school climate area also suggests that girls tend to feel stronger connections to their schools than boys (Anderman, 2002; Smerdon, 2002), although there is some evidence that this gender difference may weaken or reverse as students move from middle to high school (M. K. Johnson et al., 2001). High-achieving and more academically engaged students also express greater school membership and connections than less engaged and lower-achieving students (M. K. Johnson et al., 2001; Smerdon, 2002).

School climate has clear repercussions for young people's educational success and socioemotional well-being. When students feel a sense of belonging and connection to their schools, when they view their schools as safe places to be, and when they perceive relationships within the school to be positive, they earn higher grades in school, perform better on standardized tests, are more engaged in the school process, and are more motivated to do well academically (Anderman, 2002; Brand, Felner, Shim, Seitsinger, & Dumas, 2003; Gottfried, 2011; Hopson & Lee, 2011; Nasir, Jones, & McLaughlin, 2011; Wang & Eccles, 2012b). The potential upside of school climate also extends to school persistence and completion (Reyes, Gillock, Kobus, & Sanchez, 2000). Similar beneficial effects have been observed for students' mental health and well-being. When students view their school climates more favorably, they exhibit fewer depressive symptoms and other mental health issues, express less social rejection, and report less behavioral maladjustment and engagement in risky behaviors, including delinquency, and substance use (Anderman, 2002; Blum, McNeely, & Nonnemaker, 2002; Brand et al., 2003). This attention to the social and emotional repercussions of school climate leads us to our next area of focus: the nonacademic implications of students' experiences in schools.

### Social and Emotional Outcomes of Schooling

The research reviewed so far makes clear that students' social and emotional experience of school influences their educational success on a number of fronts, including grades, school engagement and participation, motivation, and achievement. The developmental implications of schools are not limited to the academic domain. Students' interactions with and connections to their schools and the people in these schools and their general social positions in school also influence their mental and physical health (Bond et al., 2007). These apparent effects of the informal

processes of schooling are critical given a plethora of research that shows consistent associations between psychological well-being and subsequent academic success (Benner, 2011a; Juvonen, Nishina, & Graham, 2000) and between health behaviors and educational attainment (Frisco, 2008). In discussing socioemotional outcomes here, our intent is to explain how some of the formal processes of schooling described in the previous section of this chapter have effects that extend beyond the academic realm while also showing how the informal processes of schooling described in this section are best thought of as having academic and nonacademic implications. In other words, the reality is that both formal and informal processes matter to both academic and nonacademic outcomes.

Beginning at the macro level, the equivocal findings related to the academic benefits of small schools have been well detailed in the section of this chapter on schools as educational institutions, and similar equivocal or null findings have been observed for school size influences on young people's social and emotional development. In their comprehensive review of the school size literature, Leithwood and Jantzi (2009) identified no effects of school size on adolescents' self-esteem, and the very limited research on health and social behaviors allows no firm conclusions regarding school size effects. The implications of school composition for young people's socioemotional well-being, however, are clearer but also add complexity to the previously discussed academic effects. The vast majority of this work focuses on the ethnic composition of schools and the complementary issues of diversity and same-ethnic representation. Although diversity, as noted earlier, promotes positive academic outcomes in youth, diversity comes at a social and emotional cost. Diversity entails having many groups represented and relatively equal representation among groups (Simpson, 1949), and thus any one group's representation within a school declines as diversity increases. More limited same-ethnic representation at the school level holds a host of challenges for students, including greater loneliness, increased experiences of discrimination and racism, and poorer perceptions of schools (Benner & Graham, 2011; Benner et al., 2008; Seaton & Yip, 2009). Yet, other research suggests that diversity can protect against feelings of vulnerability and improve inter-group relations (Juvonen, Nishina, & Graham, 2006; Moody, 2001). We revisit issues of diversity and representation later in this chapter.

Moving the focus to micro-level personal relationships, both peer acceptance and social status confer socioemotional advantages for young people. Students who are more

popular are perceived as exhibiting more prosocial behaviors and more positive social interactions and being less withdrawn (McElhaney, Antonishak, & Allen, 2008; Xie, Li, Boucher, Hutchins, & Cairns, 2006). Greater popularity is also associated with higher self-esteem, fewer depressive symptoms, and a better ability to form and maintain close friendships (Allen et al., 2005; B. B. Brown et al., 2008). Students who feel more socially accepted have similar positive outcomes outside the formal academic domain (McElhaney et al., 2008). Some work, however, has attempted to disentangle sociometric popularity (a gauge of social acceptance and peer preference) from perceived popularity (a measure of reputation rather than social preference). This work suggests that, although both sociometric and perceived popularity are tied to prosociality and peer cooperation, those students who are perceived as popular exhibit significantly higher levels of overt and relational aggression than their sociometrically popular peers (Cillessen & Rose, 2005). Other work echoes the downsides to popularity in ways that reflect what we discussed earlier about the academic distractions faced by high-status students. For example, Allen et al. (2005) found that more popular students were more likely to use alcohol and drugs and engage in minor delinquent behaviors. These findings, however, were conditioned on larger peer effects, such that the links between popularity and risky behaviors were stronger when adolescents' peers placed greater value on such behaviors.

This literature on peer relationships in school is, of course, tied to a much broader literature on general peer influences on child and adolescent behavior. This broader literature covers the norms and values of peers and how they influence youth (especially adolescent) engagement in risky behavior (Allen, Chango, Szewedo, Schad, & Marston, 2012; Espelage, Holt, & Henkel, 2003; Mangino, 2009). Another closely related literature focuses on the many problematic outcomes of young people who are isolated from, rejected by, or victimized by their peers (Buhs & Ladd, 2001; Flook et al., 2005; Mangino, 2009; Wentzel et al., 2004). These related literatures are the primary focus of the chapter on peer relationships by Rubin et al. (Chapter 5, this *Handbook*, this volume), and so we do not dwell on them here. The important point is that schools are sites of these peer dynamics—where peer relations form and play out—but also contexts with power to condition these dynamics. As just one example, the well-documented tendency for peer homophily in substance use (Bauman & Ennett, 1996) is actually weaker in schools in which norms against substance use are strong (Cleveland & Wiebe, 2003).

Although the vast majority of research on the socioemotional implications of schooling focuses on the peer context, a more limited body of research highlights the role of relationships with teachers and school involvement of parents in young people's mental health. When elementary students have more positive relationships with their teachers—that is, when they feel their teachers are warm, when they feel connected to their teachers, and whether the teacher-student dynamic is characterized by low levels of conflict—students exhibit fewer externalizing and internalizing behaviors (Maldonado-Carreño & Votruba-Drzal, 2011). Moreover, consistently strong relationships with teachers across elementary school are tied to lower levels of externalizing behaviors as compared to consistently poor or variable relationships, and increases in teacher-student conflict are linked to increases in students' aggression (E. E. O'Connor, Dearing, & Collins, 2011; Stipek & Miles, 2008). Similarly, when students feel their secondary school teachers treat them in a discriminatory way, they feel more depressed, report lower self-esteem, and perceive their school climates more negatively (Benner & Graham, 2011; Fisher, Wallace, & Fenton, 2000).

Having parents who are actively involved in their children's education both at home and at school seems to promote children's socioemotional outcomes, including better psychological adjustment and fewer problem behaviors (Cheung & Pomerantz, 2011; Domina, 2005; El Nokali et al., 2010; Hill et al., 2004; see O'Connor et al., 2011, for an exception). Similarly, when parents increase their own educational involvement across time, their children show improvements in emotional functioning and social skills and declines in problem behaviors (Cheung & Pomerantz, 2011; El Nokali et al., 2010). Thus, the formal processes of schooling matter for socioemotional outcomes, not just academic ones, and the same can be said for the informal processes of schooling.

## HOLISTIC DEPICTIONS OF SCHOOLING

Up to this point, we have largely separated the two sides of schooling from each other. This separation allowed many intricacies of schooling to be discussed in finer-grained detail while constructing some organizational coherence for the chapter.

Doing so revealed clear disciplinary differences in theory, methodology, and goals. Scholarship from macro-oriented fields (e.g., sociology, economics) was overrepresented in the review of research on formal processes, was

conceptually geared toward inequality, drew on methods emphasizing causal inference and generalizability, and spoke to broad debates of federal and state educational policy. Scholarship from micro-oriented fields (e.g., psychology), in turn, was overrepresented in the review of research on informal processes, was conceptually geared toward child well-being, drew on methods emphasizing dynamic change and child  $\times$  environment interactions, and spoke to focused issues of intervention.

Even though separating the two sides of schooling is useful organizationally, it does not reflect the reality of children's lives. The truth is that the formal and informal processes of schooling cannot be separated so easily. Developmental scientists have been at the vanguard of connecting these seemingly disparate processes into more holistic representations of child development within school context, and the insights gleaned from such holistic research have laid a foundation of theoretically grounded empirical evidence for efforts to reform schools and better serve children. Here, we highlight some specific issues of research and practice in which the payoff of such holistic treatments is clear.

## Desegregation

As discussed at several points in this chapter, the socioeconomic and demographic composition of schools has garnered substantial attention from both researchers and policymakers. In the policy arena, much of the attention has been on the achievement boosts of integration (Crosnoe, 2011). Developmentalists have played a key role in crafting theoretical arguments for why ethnic and socioeconomic integration should promote student achievement, arguments that touch on peer influence and the role of diversity in cognitive development. To a large extent, theory has been borne out empirically, as students from disadvantaged groups often have higher achievement in more diverse contexts (Gurin et al., 2003; Kahlenberg, 2001). At the same time, developmentalists have been leaders in crafting theoretical arguments about the potential socioemotional risks of diverse schooling environments, arguments that have been borne out empirically (Benner & Graham, 2011; Schofield, 1995). Bringing together the two sides of schooling, therefore, provides a more nuanced portrait of school composition and student outcomes, one crucial to the ultimate effectiveness of educational policies targeting composition.

Starting with ethnic diversity in schools, developmentally oriented research suggests some reasons to be

concerned with the simple conclusion that diversity is good and segregation is bad. Yes, segregation is problematic overall and certainly antithetical to civil rights, but creating diverse schooling environments without regard for the socioemotional implications for children is likely short-sighted. Ample evidence suggests that such socioemotional implications may be negative. Ethnic minority students often have less positive identifications with school when attending more diverse schools, especially when student-teacher mismatches on ethnicity are more common. Some research indicates that teachers experience such schools in similar ways (Crosnoe et al., 2004b; Goldsmith, 2004; M. K. Johnson et al., 2001; Renzulli, Parrott, & Beattie, 2011). Although diverse environments tend to foster more cross-ethnic contact and relationships, this pattern comes with diminishing returns, and such contact may actually be impaired in highly diverse schools. Moreover, as diversity grows, perceptions of discrimination increase (Benner & Graham, 2011; Moody, 2001). Similar findings have been reported for school socioeconomic diversity, with low-income students appearing to have more adverse socioemotional functioning and a greater likelihood of being cut out of competitive learning opportunities in middle-class schools. Importantly, these problems tend to be especially pronounced for ethnic minority youth (Crosnoe, 2009; Plank, 2000).

One possibility for reconciling such empirical patterns is that the socioemotional risks of school diversity may chip away at the academic benefits. If so, the potential academic boost of desegregation plans or related policies will not be fully realized unless they also attend to the socioemotional risks that might come along with more diverse schooling environments. Thus, the conclusion to be drawn from this intersection of formal and informal processes is not that segregated schools are somehow desirable. Instead, it is that making desegregation work academically requires more than simply creating school environments that are statistically desegregated; they need to be socially integrated too (Crosnoe, 2009; Schofield, 1995). This conclusion echoes research conducted in the wake of detracking. Moving beyond strict ability grouping to create heterogeneous learning classrooms was expected to boost achievement among children from more disadvantaged backgrounds. When these gains were weaker than expected, efforts were undertaken to figure out why. The resulting scientific evidence concluded that mixed classrooms often created status hierarchies that differentially elicited and rewarded the participation of students from diverse backgrounds. This research then led to classroom

interventions, such as complex instruction, aimed at reducing such status problems and making learning opportunities more equitable (Cohen & Lotan, 1995).

At the school level, some balance in formal and informal processes is needed, promoting the learning benefits of diverse environments but not hindering the sense of connection often found in less diverse environments. In an analysis of the Early Childhood Longitudinal Study, Benner and Crosnoe (2011) demonstrated that children have higher levels of achievement in diverse elementary schools only if their own groups are amply represented. This connection between diversity and critical mass or tipping points is one way to consider balance, a policy goal that demonstrates the value of developmental approaches (Linn & Welner, 2007). Implementing developmentally appropriate multicultural curricula alongside school diversity plans is another consideration, one that can be extended to other issues of culture and diversity such as social class (Pfiefer et al., 2007).

### School Transitions

As American youth move through the K–12 pipeline, they generally make structured transitions from elementary to middle school and middle school to high school. These transitions, although normative, create rifts in both formal and informal processes of schooling. With each transition, the curricula become more compartmentalized and academic standards become more “high stakes” (Baker et al., 2001). Failing a course takes on added meaning when credit accrual determines whether a student graduates on time, and grades in core courses and electives hold more weight when they determine class rank, a key factor in determining entrance into 4-year educational institutions. At the same time, school transitions also upend interpersonal relationships among students and staff (Benner, 2011b). With each transition, students encounter shifts in their social networks as they move into larger educational sites with older peers and often unfamiliar same-age classmates. Students must also forge new relationships with a different cadre of educators, who are often less available and more limited in the social support they can provide to students.

Within school levels (e.g., middle schools, high schools), approaches to teaching and learning are not always well matched with students’ developmental needs, and this mismatch has repercussions for the formal and informal processes that unfold as students transition across school levels. Such attention to mismatches is most readily apparent in the transition from elementary to middle school.



At a time of biological, cognitive, and social changes (Lerner & Galambos, 1998), when identity development is initiated and the desire for autonomy grows, young adolescents transition to middle schools that are structured in ways that do not meet their developmental needs for greater autonomy balanced with continued strong connections to educators. This poor stage-environment fit, in which middle schools are mismatched instructionally and socioemotionally, complicates students' transition experiences (Eccles, 2004). The resulting difficulties span developmental domains and are apparent at other transitions in the K–12 system. Across school transitions, students experience declines in their academic performance, school engagement, and social and emotional functioning, although heightened feelings of depression, anxiety, and loneliness more often emerge in the transition to high school than in other transitions (B. K. Barber & Olsen, 2004; Benner & Graham, 2009; Rudolph, Lambert, Clark, & Kurlakowsky, 2001; Seidman, Lambert, Allen, & Aber, 2003).

Although school transitions generally pose challenges for students, they also provide opportunities for reinvention that bridge the formal and informal processes in schools. For example, Kinney's (1993) ethnographic work highlighted a group of students who became active agents in a transformation from "nerds to normals," a shift in social status that was accompanied by heightened self-esteem. For these students, the high school transition enabled them to establish new peer relationships, escape middle school reputations, and climb the ladder of social status. Along parallel lines, Langenkamp (2010) revealed that the academic benefits of school transitions are contingent on the intersection of prior student performance and feeder pattern structures (i.e., how schools feed into the next school level). Specifically, for students who performed more poorly in middle school, transitioning to high school with fewer middle school peers promoted stronger academic performance. In contrast, those students who were higher achievers in middle school had more academic benefits when they transitioned with many middle school peers. Just as school transitions can serve as a mechanism for more positive social pathways, they can also provide a means for academic reinvention, particularly when adolescents are free of the negative expectations of their former middle school classmates.

### Public Health in Schools

Increasingly, the classrooms, activities, and programs of schools are being used to create changes in student

behavior as a means of promoting public health. These efforts expand the reach of schools beyond their official educational mission, moving more into the realm of how schools may be used to achieve the broader goal of a more stable and successful society. They represent the intersection of formal and informal processes in several ways: (a) the use of formal processes to regulate informal processes, (b) the recognition that informal processes may undermine formal processes if left unattended, and (c) the complexity of taking formal approaches to nonacademic issues.

One example of formal school programs targeting students' nonacademic behavior is sex education. Teaching students about sex has long been a highly contentious issue and a source of debate about the appropriate reach of schools into students' lives. Historically, formal curricula designed to raise students' knowledge about sexual and reproductive health have been successful. Over the last decade, many states have moved toward an abstinence-only sex education curriculum that emphasizes virginity as the only way to avoid sexual risks and downplays or eliminates discussions of other sexual practices. Evaluations of such curricula using experimental designs have shown that they are not generally effective in delaying initial sexual encounters or engagement in unprotected sex (Trenholm et al., 2007). The implementation of these curricula and related practices also seem to be shaped by the broader socioeconomic stratification system. Schools serving more socioeconomically disadvantaged populations are more likely to have abstinence-only education, and any other programs that are implemented tend to be more risk-focused and regulatory than those targeting youth from more socioeconomically advantaged families. In part, this difference arises because of what parent communities demand of their children's schools and how their demands are answered (Fields, 2008).

How peer contexts can undermine or support the effectiveness of formal school programs targeting health also warrants discussion. For example, peer network analyses have revealed that the degree to which virginity pledges, abstinence clubs, and other school-based activities factor into teenagers' sexual behavior depends on what peers are doing. Such activities are only effective if a small subset of students in a school engages in them. In these situations, the activities create a small close-knit community with strong powers of regulation. As activities become more widespread, they are more indicative of general peer processes of "following the crowd" and lose their power (Bearman & Brückner, 2001). The need to better account

for the peer settings organized by schools that implement public health prevention programs extends to other areas of risky behavior. One explanation for the ineffectiveness of efforts to incorporate peers into school-based health programs targeting youth (e.g., peer mentors or counselors) is that, in focusing on micro-contexts of peer relationships, they ignore the larger peer contexts in which these micro-contexts are embedded. In other words, schools house youth cultures with often-complex systems of norms and values. In some schools, those systems may be at odds with the goals of the programs in question, regardless of the individual peers participating in the programs. Consequently, public health researchers have called for more attention to the ways that peer-focused intervention efforts aimed at reducing risky behavior can be adapted to local school contexts (Crosnoe & McNeely, 2008; Holleran, Dustman, Reeves, & Marsiglia, 2002).

The use of schools as sites of public health intervention—and the larger issue of how schools can be leveraged to address broad social problems—is applicable to issues beyond risky behavior. As obesity rates have risen in the United States, schools have been viewed as frontlines of the battle to reduce this “epidemic.” Through incorporating nutrition into health education, regulating food sales, tinkering with food offerings in school lunches, or increasing physical activity opportunities, reducing obesity and increasing physical health have become official goals of school districts with concomitant formal programs and curricula (Story, Kaphingst, & French, 2006; Van Hook & Altman, 2012). Given the strong links among body size, social status, and mental health across the life course but especially in adolescence and childhood (Brownell, Puhl, Schwartz, & Rudd, 2005; Janssen, Craig, Boyce, & Pickett, 2004), the success of such formal efforts is also likely to be influenced by the overall peer contexts of schools regarding weight-related issues.

Discussing how schools have been viewed as appropriate sites of public health promotion indicates how the impact of schooling on youth extends beyond formal academic indicators emphasized by policy. At the same time, discussing how school-based public health efforts might be undermined by inadequate consideration of the informal processes of schooling indicates ways that developmental research can support public health efforts.

### High-Stakes Testing

A hallmark of contemporary educational policy is the push to hold schools and students accountable for their

performance. Given the attractiveness of simple measures of performance and the comparability of standardized tests across schools and over time, testing is now the benchmark of accountability. As a result of the penalties associated with failure to meet accountability, standardized tests have become high-stakes competitions. The argument is that raising the stakes puts more pressure on schools and students, which, in turn, motivates effort (McNeil & Valenzuela, 2001). NCLB is a prime example of accountability policy based on high-stakes testing, with schools penalized for failing to meet progress goals on standardized tests over time (Gamoran, 2007). On the student level, high stakes tests linked to accountability policies take many forms, including exit examinations that students must pass to graduate from high school even if they have fulfilled all of the curricular requirements for graduation (Warren & Jenkins, 2005).

Much has been written about the variable standards that go into high-stakes tests and the limitations of using narrow criteria for measuring learning (McNeil & Valenzuela, 2001). Given our focus on the intersection of formal and informal processes, we highlight a different angle; specifically, psychosocial experiences of high-stakes testing. High stakes testing is usually viewed through the narrow prism of formal academic processes. Yet, they also tap into other aspects of development and, even when considered in strictly academic terms, elicit different kinds of responses from the environment.

For example, the stakes associated with a specific test can engender anxiety and stress in young people. They know that much is riding on their performance, leading to worries that may disrupt performance (Ramirez & Beilock, 2011). Theoretically, the potential for test anxiety to interfere with the demonstration of academic skills is related to the basic logic of stereotype threat, which was discussed earlier in this chapter. In stereotype threat, the psychological perceptions of the context of some test performance—specifically, the link to ethnic stereotyping—can impair student performance (Blascovich et al., 2001). Here, the context would be the personal stakes associated with the performance, which act as artificial interference by impairing concentration and careful consideration—students have trouble doing their best work when anxious and worried about what the outcome might reveal about them. Importantly, the high-stakes nature of testing is not consistently related to school dropout, suggesting that any such pressure that may affect performance may not necessarily lead students to take steps to avoid testing altogether (Warren &

Jenkins, 2005). Still, some work indicates that there are socioemotional repercussions for failure of high-stakes tests, particularly when the academic performance of same-ethnic peers is higher (Benner, 2013).

As another example, perceptions of high-stakes testing developed by teachers and school personnel can shape instructional settings and opportunity structures for youth. Both qualitative and quantitative evidence has highlighted how schools respond to high-stakes testing in ways that hurt the educational prospects of some students. Those deemed at risk for not doing well on tests may be funneled into special education classes, which are often exempted from testing (Heilig & Darling-Hammond, 2008). Debate continues to rage about the degree to which teachers also resort to triage, focusing attention on the students near the cusp of passing standards on high-stakes tests at the expense of students who are seemingly likely or unlikely to pass (Booher-Jennings, 2005; H. F. Ladd & Lauen, 2010).

Despite the argument that standardized tests offer objective assessments of student performance, youth and adult perceptions can influence how much such tests actually capture a standardized experience and how they shape current and subsequent educational contexts (McNeil & Valenzuela, 2001). In these ways, a core component of educational policy is not quite the example of a formal process it is made out to be—informal processes can interfere with the degree to which actual formal processes are being tapped. Given how much of the work of unpacking informal processes in schooling has come from developmental traditions, developmentalists have a role to play in elucidating this interplay of the formal and the informal as a means of leading to more theoretically grounded policy.

## CONCLUSIONS

In this chapter, we have discussed many traditional topics of developmental research, from learning to motivation to engagement to peer influence. Yet, in discussing the role of schooling in the lives of children and adolescents, we have also gone beyond the conventional boundaries of developmental science to engage with research from a variety of disciplines on aspects of schooling that are frequently targeted by educational policy. In many cases, developmental scientists have been active participants in theorizing about and empirically studying these aspects of schooling, but, in other cases, they have not. Our rationale for this more expansive discussion of children in schools was twofold. First, we wanted to make the point that

understanding child development within the contexts of schools is facilitated by a broader consideration of schools as organizations embedded in a larger educational system shaped by cultural, historical, and political forces. Second, we wanted to emphasize that macro-level understanding of schools and school systems—and policies informed by this understanding—is facilitated by getting a more complete picture of what is going on in the everyday lives of children within schools. In exploring developmental and institutional approaches to schooling, and their links to large-scale policy and targeted intervention, this chapter covers a multidisciplinary landscape.

This multidisciplinary review suggests that the field is moving toward consensus on long-standing subjects of debate related to schooling, consensus aided by developmental insight. As examples, evidence suggests that that diverse schooling environments come with both academic benefits but also other risks worth considering, that studying child  $\times$  context interactions leads to better understanding of how to support child learning, that theoretical and policy attention to school size may be better directed elsewhere, and that narrowly focused assessments of student and school performance are likely short-sighted. These are not the only topics that are slowly getting closer to being settled.

When the next volume of the *Handbook* comes out, therefore, such topics may receive far less attention from the authors of the chapter on children and schools than we have devoted to them here. Instead, more space will likely be devoted to (a) issues that are still being contentiously debated, such as the role of genetics in educational outcomes and culture as a mechanism of schooling disparities, (b) important issues that we did not have the space to include here but that may be too central to schooling in the coming years to bypass in the next volume, such as home-schooling and the place of technology in instruction, and (c) and emerging issues that are likely to increasingly be the focus of developmental scientists in the future, such as the schooling experiences of sexual minority youth and the inclusion of children on the autism spectrum in public schools.

In pursuing these “new” lines of research while working on the “old” lines that need attention, educational researchers can do well by staying true to some of the themes emerging from our developmentally leaning review of research on children in schools. One theme is that the schooling of children and youth should be viewed within the larger life course, considering early experiences that shape educational trajectories into and through school as

well as what happens after young people have left school and moved into adulthood. Another is that schooling occurs at the intersection of multiple systems—those external micro- to macro-systems in which children and schools are embedded down to those internal systems developing within children—and should be examined as such. This theme comes with the qualifier that, in this intersection of systems, children are the central point, so that child-focused perspectives are paramount. A final theme is that one of the clear values of developmental research on children and schooling is its power to document risks and elucidate resilience in the face of risk, a value that lends itself to creating theoretically grounded best practices in policy and intervention.

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## CHAPTER 8

# Children's Organized Activities

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## OVERVIEW

This seventh edition of the *Handbook of Child Psychology and Developmental Science* reflects the growing recognition that family and school are only two of the developmental settings that are part of young peoples' lives. Chapters in this volume recognize the importance of neighborhoods,

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virtual worlds and online communities, work experiences, and additional contexts that influence the development of children and adolescents. *Organized activities* (including afterschool programs, extracurricular activities, sports, community service, drama, summer camps, and other school and community-based programs) have an important place in this wider ecology of developmental contexts. They account for a significant and growing segment of children and adolescents' time. Like schools, they are institutionalized settings that are often deliberately designed to facilitate young people's development. However, they have a distinct pedagogical and philosophical approach that is



more focused on engaged, hands-on, child-driven experiential learning, and that typically involves youth working collaboratively with peers. This approach is aimed at providing young people opportunities for learning socioemotional and other life skills (Eccles & Gootman, 2002), opportunities that occur more frequently in organized activities than in schools (Larson, Hansen, & Moneta, 2006). Although research on organized activities is comparatively young, it is beginning to suggest that activities can be powerful settings in which school-aged children and adolescents develop self-direction, initiative, teamwork, emotional skills, and a fuller sense of their place in the world.

In the first section, we provide a bioecological and sociocultural framework for understanding organized activities as developmental contexts. In the second section, we describe methodological strategies and common assessments that have been used to study organized activities. Next, in the third section, we focus on key parameters and processes, including dosage, type of activities, and program quality, that have been systematically studied. In the fourth section we turn to the individual, family, peer, and school/community factors that predict participation in organized activities, including who joins activities (and why) and who drops out of activities (and why). The fifth section reviews evidence on the influences of organized activities on child development outcomes and the child, family, and community factors that moderate these relations. The following section focuses on experiences and outcomes associated with unsupervised settings, which can be juxtaposed to those found in organized activities. In the seventh and final section, we summarize the current research evidence and propose future directions for research.

## CHILDREN'S ORGANIZED ACTIVITIES IN CONTEXT

To understand young people's participation in organized activities, it is essential to examine how their experiences in these settings are embedded in a broad social and cultural ecology. In this section, we begin by defining organized activities and we then situate these experiences within bioecological theory and sociocultural perspectives. At the end of the section we place organized activities within historical and global contexts. The great majority of research on organized activities comes from the United States, hence that is our primary focus; nonetheless, we include findings from other nations when possible.

## Defining Organized Activities

In this chapter, *organized activities* encompass a broad array of out-of-school settings that share essential elements. These activities include afterschool programs, extracurricular activities, summer camps, and informal learning programs offered by museums and libraries. Relatively distinct bodies of research have developed around these different settings. In this chapter, we focus primarily on the two largest bodies of research, those dealing with afterschool programs and extracurricular activities.

*Afterschool programs*, sometimes called *formal afterschool programs*, refer to activities that (a) meet on a regular basis throughout the school year; (b) are supervised by adults; (c) offer more than one type of activity (e.g., homework help, recreation, arts and crafts); and (d) are structured around group-based activities (Roth, Malone, & Brooks-Gunn, 2010; Vandell, Pierce, & Dadisman, 2005). Almost 60% of the public elementary schools in the United States provide onsite afterschool programs, and 37% of the schools offer more than one program. Together, these school-based programs serve an estimated 4 million children (Parsad & Lewis, 2009).

Afterschool programs serve multiple functions. They typically provide homework help, recreational activities, and sometimes cultural activities (Parsad & Lewis, 2009). In the United States, about one-third of the programs in public elementary schools are supported by fees. Other afterschool programs are specifically targeted to low-income children or youth, and are typically free or charge only a nominal fee. An example is the 21st Century Community Learning Centers, a federally funded afterschool program found in all 50 states and attended by more than 1.6 million children (Afterschool Alliance, 2013). Some states also provide direct support to afterschool programs that serve low-income children and youth. California's After School Education and Safety (ASES) program, for example, is located in more than 4,000 schools and receives more than \$550 million in state funding (California Department of Education, 2013). Other afterschool programs serving low-income youth, such as the Boys and Girls Clubs, are sponsored by community-based organizations. Still other community-based programs, such as 4-H and the YMCA, serve middle-class as well as low-income youth. Many of the programs, both fee based and publicly funded, are used by working parents as childcare arrangements.

A second broad category of organized activities is *extracurricular activities*, which include both school-based

and community-based activities. Extracurricular activities, unlike afterschool programs, tend to focus on a single activity such as a sport, club, performing art, or vocational preparation (Mahoney, Vandell, Simpkins, & Zarrett, 2009; Vandell, Pierce, et al., 2005). However, they resemble afterschool programs in other ways. Like afterschool programs, they meet on a regular basis. They are supervised by adults, involve groups of young people, and offer activities that are structured. Like afterschool programs, they often serve as childcare arrangements for working parents (Laughlin, 2013). Their primary focus, however, is on facilitating positive development (Eccles & Gootman, 2002). Indeed, most parents believe extracurricular activities are valuable arenas for socializing children to important values and skills that extend beyond the skills of ball handling or creating a character in a play (Kremer-Sadlik & Kim, 2007).

These two broad categories of activities (and other organized activities like summer camps and programs offered by museums and libraries) share important elements. They are supervised by adult leaders, and activities typically involve peer interaction. They have regular participation schedules, offer opportunities for hands-on experiential learning, and allow young people to pursue their interests. Organized activities fall outside the regular school curriculum and, unlike school, participation is voluntary. Youth often develop meaningful relationships with peers and leaders that can provide a context for development of identity, initiative, and social skills (Hirsch, Deutsch, & DuBois, 2011; Larson et al., 2006). These elements help define organized activities and provide affordances for distinct developmental processes.

Not included in our definition of organized activities are individual music or art lessons, sports instruction, and academic tutoring. We also exclude extended day programs in which the traditional school day is lengthened until 5 or 6 p.m., because these extended day programs are not voluntary.

### A Bioecological Approach

Bronfenbrenner's theoretical contributions—*ecological systems theory* (Bronfenbrenner, 1979) later expanded and amended as *bioecological theory* (Bronfenbrenner & Morris, 2006), provide a rich and generative framework for studying organized activities, particularly in drawing attention to important active ingredients and features of these activity settings, and in formulating ways to conceptualize relations between these activities and other developmental settings.

Bronfenbrenner (1979) identified four types of systems, from small to large, that are useful in conceptualizing the different levels of factors that influence young people's experiences in organized activities. The *microsystem* is defined as "the pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features" (p. 22).

Vandell and colleagues (Vandell & Posner, 1999; Vandell, Pierce, et al., 2005) utilized Bronfenbrenner's framework to highlight key processes and features to be considered in studies of organized activities. These include examinations of the patterns of activities that occur in a particular setting (e.g., sports, arts, community service) and the roles and identities (swimmer, scientist, dancer, cookie salesperson, committee chair, stage manager) that young people assume in each setting or microsystem. Understanding organized activities, Vandell and colleagues argued, also requires consideration of interpersonal relations, including the interactions between adult staff and youth and between peers who are program participants. Finally, activities have particular physical and material features and resources (e.g. a gymnasium or science lab; video, gardening, or cooking equipment) that support or constrain the ways that youth experience these activities. Researchers can study each of these components of organized activity microsystems to understand *why* youth participate in some activities and not others (or to self-care or other microsystems that might otherwise occupy her time) and *why* some activities are linked to positive developmental outcomes and others are not.

Bronfenbrenner (1979) also highlighted the importance of *mesosystems* or "the linkages and processes taking place between two or more settings containing the developing person (e.g., the relations between home and school). In other words, a mesosystem is a system of microsystems" (p. 25).

An important, but understudied, mesosystem consists of the connection between the home and children's organized activities. Ecological systems theory suggests that the cohesion of goals, quality of communication, and coordination between both the home and an organized activity are likely to influence children's program participation and its influence on them. One might ask, for example, are the day-to-day transitions between an afterschool program, soccer practice, and self-care well coordinated so that a child is not exposed to risky situations? Do the norms of the program conflict with the family values of the youth they are trying to serve? For older children, is participation curtailed because of familial responsibilities, such as the

need to care for younger siblings or to work part-time to contribute income to the family (Simpkins, Ripke, Huston, & Eccles, 2005)? These issues are all reflective of the mesosystem.

Other examples of mesosystems are seen in the overlap or connections between organized activities and schools (Bennett, 2013). In some cases, there is no communication between the school and the organized activity microsystems, and linkages are weak. In other cases, the school and organized activity microsystems are coordinated and aligned. There are regular lines of communication, and resources and curriculum may be shared. Bennett (2013) has found that this alignment between programming of schools and afterschool programs was associated with gains in students' language arts and math test scores.

Other linkages take the form of *exosystems*, or linkages or relations between microsystems, in which one of the microsystems does not include the developing child (Bronfenbrenner, 1979). An example of an exosystem can be found in the connections between afterschool programming and parents' work schedules, as this relationship often dictates whether a child is able to regularly attend a program.

Finally, Bronfenbrenner (1979) highlighted the importance of the *macrosystem*, or the overarching beliefs and value of the society as reflected in culture, religion, and the socioeconomic organization. A crucial point is that the macrosystem is *not* separate from young people's immediate environments. Rather, it influences what happens in the micro-, meso-, and exosystems. As we discuss in the next subsection, social class and culture influence what youth bring into the program and what opportunities are open to youth. Funders and community organizations may target programs or programming approaches for specific populations of young people. For example, the federally funded 21st Century Community Learning Centers program was developed to serve students in high poverty schools. In contrast, 4-H was originally developed to serve rural youth. The point is that understanding the meaning and impact of the organized activities requires placing the activities within the broader macrosystem in which they occur.

In the 2006 *Handbook of Child Psychology*, Bronfenbrenner and Morris presented a substantially revised theory, renamed *bioecological theory*, in which development is hypothesized to be the joint product of four defining properties: *Person*  $\times$  *Process*  $\times$  *Context*  $\times$  *Time*. The revised theory emphasized that characteristics of the developing *Person*, such as age, gender, temperament, and competencies, interact with characteristics of the environment to

influence developmental opportunities and outcomes. In this chapter, we consider two broad ways in which *Person* characteristics are essential to understanding organized activities. One way is as *selection factors*. In the fourth section we look at individual factors associated with participation versus nonparticipation in activities. *Person* characteristics also are important as *moderators* of the effects of organized activities on developmental outcomes. In the fifth section, we see that effects of activities on outcomes are not always universal, but vary as a function of individual characteristics such as age, gender, prior adjustment, and skills.

A second defining property of bioecological theory is *Process*, which refers to the developing person's experiences within microsystems, including their social interactions with others and their engagement in particular activities with particular materials. Bioecological theory argues we should pay close attention to the *proximal processes* that occur within organized activities, including the quality of social interactions of youth with peers and leaders, the experiences that young people have with materials and resources in the setting, and the opportunities to choose among activities with much greater autonomy than that afforded by schools. Bronfenbrenner and Morris (2006, p. 996) posit that proximal processes are "the primary engines of development."

The third defining property of bioecological theory is *Time*, which is formulated to include minute-by-minute exposure to proximal processes as well as the periodicity of these processes over longer intervals such as days or weeks. The intensity (minutes or hours per week) and duration (months and years) of organized activities correspond to micro-time and meso-time, respectively, and have been linked to the effects of organized activities on child developmental outcomes. In general, and consistent with the predictions of bioecological theory, greater intensity and longer durations (Blomfield & Barber, 2009; Fredricks & Eccles, 2010) are found to predict larger program effects than does less exposure. Bronfenbrenner and Morris also propose consideration of *Time* at the macro level. Historic changes in society across generations and the evolution in the institutional philosophies of child services, described later in this section, are examples of macro-time processes that influence organized activities. The fourth property, *Context*, includes the micro-, meso-, exo-, and macrosystems of his original theory.

At the same time that Bronfenbrenner was developing his framework, other theorists were proposing related ecological theories, each expanding on different psychological, social, and cultural components that are relevant

to organized activities. Lerner's relational developmental systems theory (Lerner, von Eye, Lerner, Lewin-Bizan, & Bowers, 2010) provides a more differentiated accounting of "living systems" that make up the human ecology, and it gives particular attention to how the strengths of youth and the assets they experience in organized activities influence their development. Spencer's (2006) phenomenological variant of ecological systems theory focuses on the experiences of youth of color and their attempts to make sense of their experiences with social inequality and injustice. In the next subsection, we give special attention to sociocultural theories, derived from sociology and anthropology, which contribute to understanding how macrosystems, specifically social class and culture, influence organized activities.

### Sociocultural Perspectives

Sociocultural perspectives are vital to understanding the experiences of different groups of children in organized activities and the developmental fit of programs to these groups.

#### *Social Class*

Social class encompasses both the income and material assets of a child's family and its social capital (i.e., social resources and knowledge). Financial assets influence which programs a child is able to attend. Upper-middle-class families spend much more each year on afterschool activities (Carver, Iruka, & Chapman, 2006); youth from low-income families have fewer and less varied choices (Laughlin, 2013). Safety concerns, transportation, parents' irregular working hours, and families' needs for help at home, which may be related to families' resources, also influence participation.

Youth at different social class levels bring different social capital and developmental needs into a program (Lareau, 2011). Some programs in low-income neighborhoods are designed to provide experiences and social capital that improve life chances for young people. They provide experiences that help prepare them for the work force or college, connect youth to high-resource adults, and socialize them in middle-class values (Halpern, 2002). Other programs are directly targeted at ameliorating academic deficiencies and narrowing the academic achievement gap. However, some critics express concern that these programs coopt low-income youth into a middle-class agenda, which some parents or youth may not endorse (Kwon, 2013).

### *Culture and Ethnicity*

Both youth and programs have a culture (behavioral norms, values, modes of thinking and acting), and the fit between the culture of a child and the culture of the program shapes his or her experience, continued participation, and developmental outcomes. Yet, although there is much at stake in this fit, researchers have generally neglected this issue. Researchers, as well as many programs, adhere to a "one size fits all" perspective on programming (Fredricks & Simpkins, 2012).

Whether it is visible or not, young people bring their culture into a program. The ingredients include family beliefs and values, parents' ongoing expectations for their children, and the shared history of a cultural group (e.g., shared hardships, discrimination, and a sense of ethnic privilege, pride, or injustice). The cultural backgrounds of youth from outside the dominant culture in a society are sometimes viewed from a deficit perspective. Yet a culture provides its members with funds of knowledge, tools, norms, and ways of thinking (Rogoff, 2003), and these can contribute to young people's engagement in and learning from program activities (Morland, 2007; Villarruel, Montero-Sieburth, Dunbar, & Outley, 2005). For example, Salusky et al. (2014) found evidence that the high cultural value placed on mutual trust and cooperation (*confianza*) in Latino/a culture was a valuable asset among the Latino/a youth in programs they studied. The Latino/a youth were more likely to engage in collaborative work on projects, and this appeared to both increase their motivation and catalyze peer processes that helped youth grow in responsibility, confidence, and maturity.

A critical question is, "How can programs provide a developmentally positive fit that respects the cultural background of youths?" A lack of fit can create misunderstandings between youth and staff, breed peer conflicts, and discourage the participation of youth. For example, Simpkins, Delgado, Price, Quach, and Starbuck (2013) found that Latino/a youth and parents frequently cited discrimination as a reason for the low participation of youth. To address this question, it must be recognized that youth programs (and the larger organizations in which they often reside) are cultural systems: They engage youth in activities and role-relationships within a framework of beliefs, values, meanings, and expectations. This framework is typically rooted within the culture of the wider society, or a subcultural group.

Some programs are deliberately designed to provide this fit for a specific cultural group; and research with



adolescents suggests that these programs can strengthen cultural consciousness and ethnic identity (Riggs, Bohnert, Guzman, & Davidson, 2010). For adolescents from nonmajority cultural groups, cultural consciousness and identity are consistently found to be valuable to the well-being of youth (Chao & Otsuki-Clutter, 2011). Having membership from the same ethnic background provides conditions for youth to engage in identity work in a safe and supportive environment, with peers who are dealing with similar issues. This can be especially valuable for youth from ethnic groups that have experienced collective trauma, injustices, or marginalization by society (Ginwright, 2010; HoSang, 2006). These ethnically focused programs may provide opportunities for youth to become proactive in asserting their ethnic identities and to develop civic skills for addressing grievances (Ginwright, 2010; Kwon, 2008).

Some program models are developed with youth from one ethnic group and then used with another, which creates a high risk of misfit. Cole (2006), however, provided an instructive example of best practices for adapting programs across cultural groups. He describes how his team implemented their program, the Fifth Dimension, to increase cultural fit for fifth graders in a Latino/a neighborhood. They recruited Latino/a staff, and infused Spanish language and Mexican American heritage into activities, games, and program relationships. They also drew on Latino/a norms of multigenerational assistance as a cultural asset, cultivating parent participation and encouraging older youth to take responsibility for younger youth.

It is more challenging to conceptualize how programs can provide cultural fit and build on young people's assets when the youth in a program are from diverse cultural backgrounds. The many possible combinations and proportions of youth from different groups in these programs vary enormously, and theory suggests that these different combinations may contribute to widely varying program dynamics. Okamoto, Gast, and Feldman (2012) express concern that programs serving multiple ethnic groups are likely to be much less effective in meeting the culture-specific needs of youth from any group, because it is harder for them to provide same-ethnicity staff and a critical mass of peers for all youth.

But research suggests that when multiethnic programs make cross-cultural understanding a central focus, they can have substantial positive effects on youth. They can facilitate peer processes among teens that also facilitate changes in their value perspectives from an egocentric to more inclusive worldview (Larson, Jensen, Kang, Griffith,

& Rompala, 2012). The most dramatic examples are peace education programs that create structured interactions between youth from conflicting groups (e.g. in Israel/Palestine, Latin America, Sierra Leone, South Africa). Findings suggest that they can provide context for understanding and reconciliation between youth (Norman, 2009; but see Hammock, 2011).

### *Immigrant Youth*

Youth from immigrant families can present distinct issues and opportunities for programs. In these families, parents and children are typically involved in an ongoing process of cultural adaptation, one in which children often assimilate more quickly to the new culture; and this can lead to family conflict (Berry, 1997; Chao & Otsuki-Clutter, 2011). At the same time, recently arrived immigrant youth are often quite isolated in their schools and neighborhoods (Gaytan, Carhill, & Suarez-Orozco, 2007).

Programs can play important "bridging roles" in facilitating young people's adaptation to their new, evolving situation (Cooper, 2011; Gaytan et al., 2007). They can connect youth to peers in similar situations and to program staff and service professionals who serve as cultural guides (Gaytan et al., 2007). They can provide opportunities for young people's cultural backgrounds to be recognized as assets (Morland, 2007), as well as to help youth develop bicultural competencies, including helping youth better understand their parents (Larson et al., 2012). But the role of programs and practitioners in providing "culturally competent" support for youth is complex, and not well researched. Immigration is experienced in widely varied ways between (and within) groups, as a function of economic, cultural, sociological, political, and other factors (Berry, 1997). It is important for researchers and programs to be sensitive to these variations.

### *Activities in a Historical Context*

Although afterschool programs and extracurricular activities in the United States developed for different purposes, their rise occurred concurrently during the progressive movement to overhaul public education (Halpern, 2002). Prior to the creation of robust child labor laws and publicly funded high schools, many young people worked full-time alongside adults in the workplace (Mahoney, Parente, & Zigler, 2009). As child labor laws moved youth out of the workforce and into schools, their school days ended earlier than their parents' workday, leaving a gap in parental

supervision. This led to a growing concern regarding how youth spent their time outside of school (Halpern, 2002; Mahoney, Parente, et al., 2009).

These concerns spurred the growth of community-based organizations such as the Boys and Girls Clubs, 4-H, and Boy Scouts. In the case of the Boys and Girls Clubs, an early focus was placed on keeping inner-city youth safe and off the street during afterschool hours (Mahoney, Parente, et al., 2009). In contrast, 4-H was founded to make public school education more connected to traditional rural life. Part of the organization's initial goal was to expand new agricultural technologies through working with the youth of farming families, as researchers from public universities found that adults were not as receptive as their children to adopting new technologies (4-H History, 2013). In 1928, The National FFA Organization was founded for a similar population with the goal of ensuring the conservation of agricultural education in public schools (FFA History, 2013). The formation of Boy Scouts of America (BSA) was driven by different goals. Because the progressive movement to expand primary schooling was seen as a feminine initiative, some upper- and middle-class men became concerned that boys were getting too much exposure to feminine culture (Macleod, 2004). The BSA was founded as a way to "re-masculinize" adolescent boys (Hantover, 1978).

The growth of public education in the latter half of the 19th century also led to the expansion of what was called "extracurriculum," as education reformers emphasized a "holistic" education that extended beyond academic instruction. The beginning of the 20th century saw the expansion of high school band, orchestra, and speech and debate from novelty classes sparsely included in school curricula to robust and well-organized youth activities (Rhodes, 2006). Physical education also became part of holistic education, and the loosely affiliated youth-led athletic clubs of the late 19th century became fully organized, adult-lead, organizations (O'Hanlon, 1980). Contemporary organized activities continue to reflect some of these early origins with middle class children participating in extracurricular activities at higher rates and publicly funded afterschool programs serving higher proportions of low-income children (Kleiner, Nolin, & Chapman, 2004; Parsad & Lewis, 2009).

### Activities in a Global Context

In 2010, the first International Conference on Out-of-School Time was held in Geissen, Germany, and focused

on the topic of out-of-school education in a global context. Scholars from England, Germany, Holland, Japan, Korea, Sweden, Switzerland, and the United States discussed historical and political changes in their respective nations that have resulted in out-of-school time playing a substantive role in their education systems. Both the *International Journal of Extended Education* and an edited volume, *Extended Education—An International Perspective* (Ecarius, Klieme, Stecher, & Woods, 2013) were outgrowths of this conference. Findings from Canada, Australia, New Zealand, and Finland, among other nations, were reviewed.

Stecher and Maschke (2013) have described the rise in organized activities across several developed nations. They conclude that, "numerous efforts have been observed over approximately the last 10 to 20 years to expand and develop the institutional learning and care opportunities to supplement (traditional) schooling. Further development of these opportunities is the focus of educational reform efforts in many countries in the future as well" (p. 12). Some examples from Stecher and Maschke (2013) follow.

In South Korea, the expansion of afterschool activities was included as one of the 50 most important tasks listed in Vision 2030, the national strategy for the future of South Korea. Within the Korean context, an extensive system of private learning and tutoring has developed to prepare students for high school exams at the transition to university studies. These private systems, similar to the Japanese Juku schools, begin in elementary school and approximately 73% of children participate in the private out-of-school educational activities. In addition, in recent years an alternative system of publicly funded afterschool programming has been developed to provide a more affordable opportunity aimed at closing the achievement gap between economically disadvantaged students and their more affluent counterparts.

Sweden has adopted a different model, one that focuses more on recreation and less strictly on academic activities. The goal of these centers is to complement the school day in terms of both time and content, and to offer children between the ages of 6 and 12 meaningful leisure to support their positive development. Swedish municipals also provide recreational centers for teenagers. The centers serving older youth are less structured than the programs for children and are designed to provide adolescents with a place to meet and talk, buy refreshments, play board games, floor ball, and so forth, as opposed to having explicit developmental goals (Haglund & Klerfelt, 2013).

The academic and political debate in Germany has focused on the educational benefits of all-day schools, mainly because of Germany's poor performance on the Programme for International Student Assessment (PISA) studies. It is anticipated that the extracurricular activities—such as academic enrichment, art, music, and sports—offered at all-day schools will boost academic achievement, particularly for students needing special support such as children and adolescents from immigrant families. As a result, the number of German all-day schools has more than doubled from 4,951 in 2002 to 11,825 in 2009.

Vest, Mahoney, and Simpkins (in press) used data from the Trends in International Mathematics and Science Study (TIMSS) that includes measures of out-of-school time and achievement of eighth-grade students from nearly 50 countries worldwide. Variables included technology-based (e.g., using the Internet), labor (e.g., chores), and leisure activities (e.g., sports, playing with friends). They found that, beyond the large contribution of a country's human development index (health, education, and living standards), out-of-school time was a statistically significant, meaningful predictor of achievement, suggesting that a broader view of education that includes organized activities outside of school is needed, both within and between nations.

## METHODOLOGIES FOR STUDYING ORGANIZED ACTIVITIES

The great diversity of organized activities presents researchers with challenges of how to measure youth experiences in these diverse microsystems. Four strategies have been used with success: (1) qualitative interviews and ethnographies, (2) experience sampling and time diaries, (3) questionnaires and surveys, and (4) observations.

### Qualitative Interviews and Ethnography

Qualitative methods are often the method of choice for examining new uncharted topics, and these methods have been used effectively by researchers who study organized activities. These studies provide an exploratory view of ongoing human interactions and processes as they are embedded within their *natural ecological contexts*. For research on organized activities, this contextual view spans interactions between children, staff, the program culture, physical and institutional environments, and the surrounding ecological systems. These open-ended methods have enabled researchers to identify pertinent language, concepts, frameworks, and questions for future

research. The role of these methods extends beyond this initial exploratory stage. Data in the form of words and narratives—and operations like interpreting, contextualizing, and theoretical analysis—make important contributions to understanding person-process-context dynamics within organized activities. Two general qualitative approaches (i.e., qualitative interviews and ethnographies), have proven to be particularly informative.

Qualitative interviews provide information about people's conscious experience of the person-process-context dynamics in programs. They have been used to study the internal thought processes of program staff, youth, parents, and program management. Longitudinal interviews, for example, have illuminated what staffs' planning process and goals are for an activity, and then, how program members experience the activity and what they learn from the experience (e.g., Larson & Angus, 2011a).

A model of the potential contributions of interview research is seen in a large cumulative record of interview studies on youth sports. These studies have led to the identification of 40 distinct sources of stress across the multileveled ecology of experience in sports (Scanlan, Babkes, & Scanlan, 2005). These include *intrapersonal sources* of stress (such as threats to self-esteem, worries about mistakes, guilt related to hurting opponents, and coping with injuries), *situational sources* of stress (such as pain after losing by a close margin), *interpersonal sources* (such as hostile interactions with teammates and negative experiences with coaches and parents), and others. These studies have helped "plumb the depth" of these different types of experiences (Scanlan et al., 2005, p. 280). In one interview, for example, a runner said of his coach: "If you had a bad race, he doesn't even talk to you. That's how you know you didn't do well" (Fraser-Thomas & Cote, 2009, p. 15).

Sports researchers have used this charting of sources of stress along with enjoyment and other dimensions of sports experience as the basis for conducting *quantitative studies* that evaluate their impact on athletes' well-being and continued participation in a sport (Scanlan et al., 2005). This work has also contributed to the design of interventions to train novice coaches to create positive learning environments (Smoll & Smith, 2010).

Researchers in the wider field of youth development have begun to use interview methods to realize this potential, addressing topics such as the reasons that immigrant youth stay in or drop out of organized activities (Simpkins et al., 2013), the challenges and expertise of program staff (Larson & Walker, 2010), the processes in programs

through which adolescents are active agents of their own development (Kirshner, Pozzoboni, & Jones, 2011; Larson, 2011), and the interactions between parents and youth around the program (Larson, Pearce, Sullivan, & Jarrett, 2007).

Ethnography, which involves intensive observation and interviews, can offer a more integrated view of processes across systems in the ecology of organized activities. Fine (1987) documents how interaction between boys and coaches in five Little League teams socialized the boys into a code of toughness, emotional control, loyalty, masculinity, and homophobia. Heath (1998), a linguist, used intensive observation to discover how youth in project-based programs learned a distinct “language of work,” including “if-then” constructions, modals (e.g., can, should, could), and mental state verbs (think, believe, wish, feel). A study of Boys and Girls Clubs by Hirsch, Deutsch, et al. (2011) demonstrates how ethnography can provide holistic understanding of the processes influencing program quality within youth organizations. They conducted 233 participant observations over a year at three clubs in similar low-income urban neighborhoods. They also interviewed youth (Ages 10 to 17) and staff at the program. The study provides a picture of the ecological processes differentiating a high-quality club, West River, from a low-quality club, North River.

At West River there was synergy between management, staff, and youth. The director communicated a strong, consistent focus on young people’s positive development. Staff members were encouraged to develop new activities, especially those that allowed youth to exercise initiative. As a result, West River had many more activity choices than North River, and West River’s activities provided “a steady diet of opportunities for exercising leadership and responsibility” (Hirsch, Deutsch, et al., 2011, p. 244). The activities also provided more opportunities for youth to form close mentoring relationships with staff. For example, a young man formed a bond with Victoria, a staff member, through a dance group she organized. The trust that he developed with her allowed Victoria to challenge his disrespectful behavior and provide coaching that helped him learn to work effectively with younger children.

In contrast, disorganization and conflict characterized the ecosystem of North River. The director was authoritarian. He reprimanded employees in front of youth and undermined an activity started by one youth. Given this hostile climate, conflicts “spread like wildfire” through the organization (Hirsch, Deutsch, et al., 2011, p.147). Front-line staff rarely collaborated and often clashed with

each other. The researchers observed *10 times* the number of staff conflicts here compared with West River. In this authoritarian and punitive climate, staff felt they had to keep children on a short leash. A youth complained that the staff member leading the cheerleading team was “having us do a bunch of cheers that we don’t like. And she won’t let us do any of ours” (p.165). When asked about mentoring, a staff member described advising youth to “learn to respect adults” (p.192). The study provides insight on how program quality is shaped by interactions within and between every level of an organization.

Ethnographic studies have also highlighted the roles of organized activities in family life and child development. In a study of 32 families, Kremer-Sadlik and Kim (2007) conducted interviews and observations of middle-class U.S. families during formal participation in organized sports (e.g. Little League), informal participation (e.g. backyard pick-up games), and passive participation in sports (e.g. watching televised athletic events). Their detailed analysis of parent-child interactions and conversations revealed sports activities as an arena in which parents sought to socialize their children to values and skills that went beyond the benefits of participation in athletic activities. The ethnographic data helped illuminate the function that sports have in family daily life as a socializing tool for culturally cherished skills and values.

### Time Diaries and Experience Sampling Reports

Kenny describes systematic direct measurement of daily experience as “one of the most exciting developments in social and behavioral methodology” (Bolger & Laurenceau, 2013, p. viii). Research on organized activities has used two of these methods, experience sampling and time diaries, to determine how young people’s *time use* and *subjective states* during organized activities differs from their experience in other settings. These methods have the advantage of obtaining ecologically valid data, in the moment, that reduce effects of retrospective bias and memory selectivity. When these methods are used to obtain repeated quantitative measures, they yield additional benefits, including permitting the study of *within-person patterns and processes over time*, using statistically controlled multivariate analyses.

Time diaries can be used to measure the “dosage” of particular types of experience, for example, amount of exposure or experience in a given activity, setting, or interacting with adults or peers. In early research, Posner and Vandell (1994) employed telephone time diaries to



study differences in how low-income 8- and 9-year-olds spent their time in afterschool programs as compared to other settings such as self-care and babysitters. They found that, at programs, children spent much more time actively involved with adults and with peers in contrast to children in self-care or informal adult supervision arrangements.

In other work, Vandell, Shernoff, et al. (2005) employed experience-sampling methods to obtain reports from middle school youth at random times during the afterschool period. While at programs, youth spent less time in passive activities like watching TV and eating snacks than was the case when these same youth were at home after school. Experience sampling also has identified differences in the subjective states experienced by older youth in organized programs, as compared to other daily settings (Larson & Rusk, 2011). The strong consistent finding across multiple studies is that mean levels of different dimensions of engagement—including intrinsic motivation, effort, concentration, investment, and challenge—are higher when young people are in organized activities than in other parts of their lives. In contrast, during schoolwork, youth report their concentration and challenge are high but their motivation is low, whereas during leisure activities with friends motivation is high, but concentration and challenge are low (Larson, 2011; Vandell, Shernoff, et al., 2005). The implication is that organized activities are a unique context in adolescents' lives in which their hearts and minds are "meaningfully engaged" in learning activities (Shernoff, 2013).

These methods provide tools for understanding how different aspects of the bioecology of young people's experience in organized activities change over time. For example, Traves, Harre, and Overall (2012) used intensive sampling to study youth in a dance program over 5 months as they prepared for a competition. Over nine data collections points, youth reported significant increases in excitement, enthusiasm, and "togetherness" as a team. This progressive increase in engagement suggests collective processes that may be activated as young people work together toward a final product. A future step for these methods is examining mediating processes (e.g., leader and parent support, peer dynamics) that influence these variables and, ultimately, the developmental outcomes for youth.

### Survey Measures, Archival Data, and Questionnaires

Survey measures provide the backbone for many of the studies of organized activities. In this section, we describe several publicly available, nationally representative

surveys, as well as other questionnaires, developed to assess the quality of youth experience in organized activities.

One useful survey is the Before- and After-School Programs and Activities Interview, which is part of the National Household Education Survey (NHES) conducted by the U.S. Department of Education (see <http://nces.ed.gov/nhes/questionnaires.asp>). This nationally representative survey was administered in 1999, 2001, and 2005 to parents of students in grades kindergarten through eighth grade (roughly Ages 5 to 13) who responded to questions about regularly used arrangements during the afterschool hours, including programs and activities for individual children. Parents report amount of time (hours, weeks, months) their child spends each week in the activity, its location (e.g., school, church), the number of participants in the group, number of staff, costs, language spoken, transportation to and from the activity, and the specific kinds of programming that occurred. Parents also respond to questions about informal afterschool care arrangements by relatives and by nonrelatives, as well as how often the child typically cares for him or herself.

These NHES data have been used to draw a nationally representative picture of the prevalence and intensity (hours and duration) of organized activities in the United States. Because the data set also includes information about family and child characteristics, such as ethnicity, country of origin, grade level, receipt of special educational or social services, and the academic and behavioral functioning of the focal child, it is a rich resource for secondary data analyses on a wide range of questions about the bioecology of organized activities. However, it is limited in two respects. First, the survey is cross-sectional, so only concurrent associations can be studied. Second, all data were obtained from a single data source—parent reports.

A second nationally representative study, the Early Childhood Longitudinal Study (ECLS-K), is also publicly available (at <http://nces.ed.gov/ecls>). Begun in 1999, the study is longitudinal and utilizes multiple research methods and includes multiple respondents. The first round of data collection began when children were in kindergarten (1998–1999) and continued when children were in first, third, fifth, and eighth grades. Parents answer questions about their children's out-of-school activities in third, fifth, and eighth grades, including participation in specific types of activities (sports, clubs, dance, music, performing arts, and art). Reading and math achievement are assessed by trained survey staff. Social and behavioral outcomes, such as approaches to learning, are reported by parents and by classroom teachers.

Several investigators (Covay & Carbonaro, 2010; Dumais, 2006) have used this data set to study social class and ethnicity differences in extracurricular activity participation and concurrent associations between activities, as well as cognitive and noncognitive outcomes in Grade 3. A notable strength of this data set is that investigators can employ numerous controls for family and school characteristics, in addition to controls for children's earlier functioning. Other aspects of this data set (e.g. studies of effects associated with cumulative participation in organized activities over time) have not been analyzed.

The National Longitudinal Study of Adolescent Health (Harris et al., 2009) is a third nationally representative survey that includes questions about organized activities. It is an interesting complement to the ECLS-K because it follows a nationally representative sample of adolescents in Grades 7 to 12 (roughly 13 to 18 years). Begun in 1994–1995, adolescents answered questions about their extracurricular activities. The sample was then followed up in 1996, 2001–2002, and 2007–2008, and expanded to include interviews with parents, teachers, peers, and romantic partners as well as the adolescents themselves. Some of the data from this survey are publicly available, and other parts of the data set are available under restricted use to preserve confidentiality. Simpkins, O'Donnell, Delgado, and Becnel (2011) used the Add Health to study Latino/a young people's selection into organized activities. Feldman and Matjasko (2007) used the Add Health data to identify profiles of students who participate in extracurricular activities, and Daniels and Leaper (2006) investigated connections between activity participation, self-esteem, and peer acceptance.

Three additional nationally representative data sets support secondary data analyses of the antecedents and consequences of organized activities within a bioecological framework. The Survey of Income and Program Participation ([http://www.census.gov/sipp/top\\_mod/2004/topmod04rev.html](http://www.census.gov/sipp/top_mod/2004/topmod04rev.html)) is conducted by the U.S. Census Bureau and focuses on organized activities within the broader context of child care and the needs of working families. The Panel Study of Income Dynamics (<http://psidonline.isr.umich.edu/Guide/documents.aspx>) is a long-running study conducted at the University of Michigan. The third data set, and most frequently used to study extracurricular activities, is the National Education Longitudinal Study (NELS), which began in the spring 1987–1988 and resurveyed the same students in 1990, 1992, 1994, and 2000. Data were collected from parents, schools, and teachers, and from extant high school

and postsecondary transcripts. Lipscomb (2007) used the NELS to study extracurricular involvement and later academic achievement. Dumais (2008) used the NELS to relate extracurricular involvement to math achievement and college expectations. Although developmental scientists have used these data sets to study child and family factors associated with participation in activities (i.e., selection) as well as investigating links between participation and student outcomes, these data sets are still under-utilized resources.

A limitation of all of the currently available national surveys is that they do not ask youth about the *quality* of their experiences in organized activities. Several questionnaires have been developed, however, that do collect this information. One questionnaire, the After-School Experiences Survey (Rosenthal & Vandell, 1996) and its abbreviated version, the After-School Experiences, Short-Form (Vandell, 2012) have been used in several large-scale studies, including the public data set of the NICHD Study of Early Child Care and Youth Development. A variant of this questionnaire, the *Summer Program Experiences Survey* has been used in summer programs (Vandell, Hall, O'Cadiz, & Karsh, 2012).

These surveys ask children to rate the quality of their experiences with respect to interactions with adult staff, interactions with peers at the program, and their interest in the activities, all rated on 4-point scales. Sample items include: "I trust the staff here," "I like the activities here," and "I get to know other kids here really well." Youth reports of the quality of their experiences are significantly related to observations conducted by trained observers (Rosenthal & Vandell, 1996). More frequent negative staff-child interactions, as reported by independent observers, are associated with youth reports of more negative staff-child relationships. Observers' reports of a greater variety of program activities are related to youth reports of greater interest in program activities. Youth reports of the overall quality of their experiences at programs and reports on individual subscales are related to classroom teacher reports of social competencies, (reduced) problem behaviors, and academic functioning (Kataoka & Vandell, 2013a; Vandell et al., 2012). These findings indicate convergent and construct validity of the scales.

The Afterschool Experiences Short-Form has been adopted by the State of California as part of its ongoing quality improvement process at state-funded afterschool programs (see <http://www.afterschooloutcomes.org>). Programs receive reports summarizing the student ratings at their program with respect to three subscales: youth reports

of the quality of experiences with staff, the quality of experiences with peers, and interest in program activities. For comparison purposes, programs also receive summary information on these same scales for the state as a whole. The goal of the project is to provide afterschool programs with information about youth experiences at their program that can be used to inform efforts about aspects of programs that are working well and modify aspects of programs that are not working as well.

### Observational Assessments

As noted earlier, ethnographies have provided rich qualitative descriptions of young people's experiences in organized activities. In addition, the study of organized activities has been enhanced by an expanding array of systematic observational tools that *quantify* the *quality* of organized activities, particularly, the quality of afterschool programs. Yohalem, Wilson-Ahlstrom, Fischer, and Shinn (2009) have provided an analysis and critique of 10 observational assessments that offer setting-level observations of program quality that can be used in a range of school and community settings, and which have established psychometric properties.

The assessments differ in their particulars. Some use 4-point ratings; others use 5- and 7-point ratings. Some use time-sampled checklists in addition to ratings. The length of the observational periods vary, as does the amount and type of observer training. Some of these observations, like the Youth Program Quality Assessment (C. Smith & Hohmann, 2005), the School-Age Care Environment Rating Scale (Harms, Jacobs, & White, 1996), Dimensions of Science (Noam & Papazian, 2011), the Promising Practices Rating System (Vandell et al., 2006), and the Program Quality Observation Scale (Pierce, Hamm, & Vandell, 1999; Pierce, Bolt, & Vandell, 2010) are conducted by trained independent observers for purposes of research and evaluation. Others, like the Assessing Afterschool Program Practices Tool, developed by the Intercultural Center for Research in Education and National Institute on Out-of-School Time, were developed by practitioners to study and improve their own programs, sometimes for the purposes of accreditation by professional organizations.

Despite these differences, the observations reflect shared views about key aspects of program quality, which correspond to views of quality identified in the qualitative interviews, ethnographic reports, and the youth questionnaires of program experience. All include items or scales that assess supportive social interactions and relationships

with adult staff. All assess the types of activities being offered in term of opportunities for skill building, and all evaluate whether youth appear engaged or interested in the program's activities. Most assess how well the program is organized or structured. Most also measure the quality of interactions with peers at the program. Some, like the Program Observation Tool developed by the National Afterschool Association, are especially concerned with accreditation and program improvement. These instruments rate aspects of the physical settings, including space, furnishings, health, and safety provisions. Several measures also assess the quality of the settings as a work environment for the adult staff, including interactions between staff. There are some differences in emphasis in assessments designed for K–5 programs versus programs serving older youth, with a greater focus on supports for autonomy and leadership in the observational assessments of adolescent programs.

### CONCEPTUALIZING KEY PARAMETERS AND PROCESSES

The research methods described in the preceding section tell something about *how* organized activities have been (and can be) studied. In this section, we turn to considerations of the salient parameters that need to be understood and measured. We focus principally on quantitative research, because nearly all of the large national and multisite studies have taken this approach; and we focus on parameters in which the individual child or adolescent is the unit of analysis because that has been the focus of nearly all developmental research on organized activities.

This research has examined five broad sets of dimensions, each tapping different aspects of children's experiences in organized activities. These parameters are: (1) participation, (2) specific types of activities, (3) breadth of activities, (4) dosage or amount of exposure, and (5) the quality of experiences or developmental processes in the organized activities. These conceptualizations serve as building blocks for addressing questions about which youth participate in organized activities and what they gain from their participation, topics that are addressed in subsequent sections.

#### Participation

At its broadest level, organized activities are conceptualized in terms of *participation*, a categorical designation of

whether or not a young person participates in organized activities. In some studies, participation is a dichotomous (yes/no) variable. In other studies, participation in organized activities is juxtaposed with participation in other types of experiences, like relative care, sitter care, or self-care.

Researchers have posed two broad sets of questions about *participation*. The first considers *participation* as the dependent variable and asks, “What child, family, and community factors predict youth participation in organized activities?” This approach is concerned with selection into activities. The other set of questions considers *participation* as the independent variable and asks, “What are the effects of participation on child developmental outcomes?” This question has been asked in randomized control trials and in quasiexperimental studies, both aimed at assessing the impact of program participation on youth outcomes, relative to a control or comparison group. Researchers have also studied effects of participation using prospective longitudinal designs that include statistical controls for selection effects.

A shortcoming of these categorical designations is that participation is treated as a black box or, to use Bronfenbrenner’s terminology, a *social address* that pays minimal attention to what a child’s experience is like, what kinds of social interactions occur, or how activities and relationships in the setting could affect the child. In the case of organized activities, use of a categorical designation allows minimal insights into *why* participants differ from nonparticipants or sources of differences within participants or within nonparticipants.

Efforts to move beyond organized activities as a categorical designation have led researchers to consider four additional aspects of organized activities: *specific types* of activities, *breadth* of activities, *dosage* or amount of exposure to activities, and the *quality* of experiences or developmental processes within organized activities. Each of these dimensions is described in turn in this section.

### Specific Types of Activities

One distinction among activity types is the differentiation between afterschool programs and extracurricular activities, a distinction we introduced earlier and will return to in subsequent sections. Indeed, separate robust literatures have developed around these two types of organized activities as reflected by recent meta-analyses and research syntheses of afterschool programs (Durlak, Weissberg, & Pachan, 2010; Roth et al., 2010) and

extracurricular activities (Farb & Matjasko, 2012; Feldman & Matjasko, 2005).

Further distinctions have been made within these two classes. Within afterschool programs, researchers have studied specific types of programs, for example, those that emphasize homework help and academic remediation (Vandell, O’Cadiz, & Hall, 2010), hands-on science (Vandell, Warschauer, O’Cadiz, & Hall, 2008), digital literacy (Cole, 2006), and positive youth development (Lerner et al., 2005). An important research question is whether these different foci and attendant activities are differentially associated with academic and psychosocial outcomes.

Within extracurricular activities, researchers have studied sports, performing arts, service clubs, and faith-based youth groups. Theorists have suggested that these different activities may provide different “nutrients”—distinct constellations of developmental experiences (Eccles & Gootman, 2002). Surveys of adolescents indicate what some of these differences might be. For example, youth report more opportunities for developing initiative in sports, whereas they report having more opportunities related to personal identity and positive relationships with others in faith-based youth groups (Larson et al., 2006). Hansen, Skorupski, and Arrington (2010) have discussed differential affordances provided within different types of activities. Hockey and swimming, for example, share some affordances, such as physical training, social relationships with coaches and teammates, and emotional challenges resulting from wins and losses, but they differ in physical contact and aggressive play.

In addition to studies that contrast types of activities, others have focused on variations within specific extracurricular activities, resulting in in-depth examinations of experiences in youth sports (Scanlan et al., 2005), arts programs (Heath, 2001), civic activism programs (Ginwright, Noguera, & Cammarota, 2006), and youth music (O’Neill, 2005). An underlying theme in the collective literature on specific activities is that, although there are differences in the developmental affordances of specific activities, there are also fundamental similarities across them.

### Breadth of Activities

Many young people participate in multiple activities—simultaneously and over time. *Breadth of activities* has been used to describe participation in multiple activities. Busseri and Rose-Krasnor (2009) defined breadth as the *total number of activities* that a young person engages, whereas Eccles and Barber (1999) conceptualized breadth



as the total number of *different* types of activities, a potentially meaningful distinction that has not been explored in any detail in the literature.

In both formulations, greater breadth is posited to be beneficial because it exposes young people to a broader range of learning opportunities, a larger network of potentially supportive adults, and a larger network of different types of peers than does a single activity engaged in for an equivalent amount of time (Bohnert, Fredricks, & Randall, 2010; Eccles & Barber, 1999). Consideration of these processes has led researchers to hypothesize that breadth is particularly important in early adolescence, relative to later adolescence, because early adolescence is a period when youth are exploring different interests and strengthening ties with peers (Bohnert et al. 2010; Busseri & Rose-Krasnor, 2009).

Conceptualizations of breadth also are relevant for research in comprehensive afterschool programs that serve elementary school and middle school students. Some programs offer young people a wide variety of enrichment, academic, and recreational activities, whereas others have more restricted options. Children report more positive experiences in afterschool programs that offer a wider variety of activities (Rosenthal & Vandell, 1996). There also are indications that greater breadth of activities predicts higher program attendance (Smith et al., 2012) and more positive child developmental outcomes (Pierce et al., 1999; Pierce et al., 2010).

### Dosage

A third source of variation in organized activities is *dosage*, or the amount of time that young people participate in the activities (Bohnert et al., 2010; Busseri & Rose-Krasnor, 2009). This focus on dosage is consistent with the admonition that “to be effective, the interaction must occur on a fairly regular basis over extended periods of time” (Bronfenbrenner & Morris, 1998, p. 797). Dosage in organized activities has been measured in terms of *intensity*, defined as minutes per day, days per week, and total attendance days. Dosage also has been measured in terms of *duration* or the total length of time in the activity, assessed as months or years of participation. Finally, dosage has been conceptualized in terms of *consistency* and *continuity* over time, measured as the proportion of periods or epochs in which youth engage in activities (Auger, Pierce, & Vandell, 2013).

A repeated observation, across studies that have examined dosage, is the wide variability in this aspect of youth

involvement in organized activities. Daily attendance in afterschool programs varies widely across and within programs, from a single day to more than 180 days in a school year (Reisner, White, Russell, & Birmingham, 2004; Vandell et al., 2008), with “high” dosage defined in varying amounts ranging from 30 days to 140 days in different studies. Similarly, longitudinal studies have documented wide variations in the continuity and consistency of youth participation over time.

These variations raise questions. One set of questions asks *why* exposure to activities is so variable. What are the program, child, family, and community characteristics that predict these variations in attendance? Other questions pertain to how these variations in continuity and dosage are related to child developmental outcomes. Can children who attend programs sporadically still benefit?

### Proximal Processes and Quality

Bioecological theory—and decades of research on other developmental contexts like families and school—suggests that the *quality* of experiences that young people have in organized activities settings is crucial. Ethnographic studies, such as the Hirsch, Deutsch, et al. (2011) study of Boys and Girls Clubs (described under research methods), show that there can be enormous differences in what children experience in programs, ranging from a disorganized and conflict-laden environments in which staff see their role as teaching youth to “respect all adults,” to settings in which program directors support line staff, staff support youth, and youth have a wide variety of opportunities for activities and meaningful interactions with adults and peers.

Efforts to quantify these “proximal processes” have focused on whether a program provides activities that youth find to be challenging and engaging, whether interactions with adult staff and peers are supportive or are conflict-ridden, and whether the program provides opportunities for choice and voice in the activities. Other processes that are believed to be hallmarks of high quality organized activities are opportunities for youth to be active learners who can engage in projects in which they can develop and build skills in areas that interest them.

Defining, measuring, and testing the features of program quality has been a bootstrapping process. In their National Research Council report, *Community Programs to Promote Youth Development*, Eccles and Gootman (2002) drew on developmental theory, research on effective families, school, and youth programs, and accumulated youth practitioner wisdom to conceptualize program quality. They

identified eight features in young people's experience of a program that were likely to support positive developmental outcomes in youth.

1. *Physical and psychological safety.* Young people are safe and feel safe (e.g. from hostile peer interactions).
2. *Appropriate structure.* Staff provides clear and consistent structure and a level that is appropriate to the developmental experience and cultural model of authority of the young people in the program. Activities are not chaotic or disorganized nor are they rigid or autocratic.
3. *Supportive relationships.* Staff is responsive to youth needs, care about them, and communicate effectively with them. Detachment, rejection, and over-control are negative exemplars of this feature.
4. *Opportunities to belong.* Youth feel valued, included and experience themselves as members of the program, regardless of their gender, ethnicity, sexual orientation or disabilities.
5. *Positive social norms.* Youth experience strong norms, expectations, and a "culture" within the program that supports prosocial behaviors and sanctions deviant and antisocial behaviors.
6. *Opportunities for efficacy and mattering.* The program offers young people opportunities for active participation, meaningful challenges and empowerment.
7. *Opportunities for skill building.* Program activities provide opportunities for youth to learn physical, intellectual, psychological, and social skills.
8. *Integration of family, school, and community efforts.* There is meaningful communication and concordance between the program and other arenas of a young person's life.

Many of these features are incorporated into the existing measures of program quality, including youth-report measures of the quality of their experiences in program (Rosenthal & Vandell, 1996; Vandell et al., 2012) and observational measures such as the Promising Practices Rating System (Vandell, Reisner, & Pierce, 2007) and the Youth Program Quality Assessment (C. Smith & Hohmann, 2005).

In addition to these eight features, researchers recognize that there may be other dimensions of the program, organization, or staff that are pertinent to these proximal processes. These include features such as staff education, staff professional development, group size, staff to child ratio, and materials. These features are especially important because they can be controlled by management or regulated. All of these diverse factors have been

hypothesized to be important to program quality, and studies have been conducted to evaluate whether these factors predict proximal processes in the programs as well as youth outcomes at school.

## SELECTION IN (AND OUT) OF YOUTH ACTIVITIES

Multiple factors—children's own characteristics and interests, their family circumstances, their peer groups and friendships, school and neighborhood characteristics, and aspects of the organized activities themselves—are associated with whether young people begin a particular organized activity, persist in that activity, or terminate the activity. Identifying these factors is part of the general research topic of *selection effects* in organized activities

Understanding when and how child, family, peer, and school characteristics are related to participation is important for several reasons. First, it can inform practitioners and policy makers about why some activities are more successful than others in attracting and sustaining involvement. With this information, programs can better align their offerings to the interests and needs of the children and families they seek to serve. This understanding includes identifying factors that "pull" youth to join and persist in an activity as well as illuminating the factors that "push" children and families out of activities. Some attrition occurs when youth experience program staff or youth as unsupportive, disinterested, or hostile, or the activities are boring or poorly organized (Butcher, Linder, & Johns, 2002). In other cases, attrition reflects a developmental progression as children try out multiple activities and then begin to focus more deeply on a smaller number of activities as their interests become more defined (Rose-Krasnor, Busseri, Willoughby, & Chalmers, 2006).

Researchers also study selection in order to identify appropriate statistical controls to be used in quantitative analyses of links between organized activities and child developmental outcomes. Because many of the factors that influence selection are related to child outcomes, they (and not organized activities) may account for obtained links. Statistically controlling for selection can strengthen analyses and lessen the likelihood that obtained "program effects" are artifacts of selection bias.

Finally research studies of selection are important because they may reveal systematic inequities in access to activities. By virtue of where youth live or their family income or their sexual orientation or physical disability,

youth may be systematically excluded from activities that they would otherwise enjoy and want to participate in. In this section, we examine child, family, peer, school/community, and program factors that are associated with young people's joining activities, persisting in the activities, and dropping out of the activities.

### **Child Characteristics That Predict Participation**

Two broad classes of child characteristics have been considered as predictors of participation in organized activities. The first is demographic characteristics such as gender, age, and ethnicity. The second is various indicators of child competences and adjustment.

#### ***Gender, Age, and Ethnicity***

The Selected Indicators of Child Well Being survey conducted by the U.S. Census Bureau (2009) reports participation rates in extracurricular activities in the United States. The survey describes participation in sports, clubs, and lessons of 48.6 million young people, ages 6 to 17 years. It includes participation in all extracurricular activities and is not restricted to activities that are used as child care.

Drawing on detailed tables from the U.S. Census Bureau, participation rates can be disaggregated by child gender, age, and ethnicity. These tables suggest that gender is associated with participation during both middle childhood and adolescence. Boys are more likely than girls to participate in sports, whereas girls are more likely than boys to participate in lessons and clubs. These findings are consistent with the multivariate analyses of earlier waves of nationally representative surveys (Kleiner et al., 2004).

Child age is a second individual characteristic linked to extracurricular activities. In the Selected Indicators of Child Well Being, participation in sports is higher in adolescence than in middle childhood, whereas lessons are more common in middle childhood than adolescence. Participation in clubs is similar in the two age groups; about 30% of the children and adolescents regularly participate in club activities. These findings are also consistent with the multivariate analyses of earlier national surveys (Kleiner et al., 2004). In other longitudinal analyses of U.S. and Canadian youth in large, but not nationally representative samples, it appears that activities become more specialized in older children and adolescents as youth move from participating in a broad range of activities to a small number of activities over time (Denault & Poulin, 2009; Eccles & Barber, 1999; Rose-Krasnor et al., 2006).

Finally, there is evidence that ethnicity is linked to participation. In the Selected Indicators of Child Well Being, European American children (Ages 6 to 11 years) participate in sports at higher rates than Asian American, African American, and Latino/a American children. Asian American children participate in lessons at higher rates than other groups. Asian American and European American children participate in clubs at higher rates than African American and Latino/a American children. European American adolescents have the highest participation rates in all categories of extracurricular activities (sports, clubs, and lessons) and Latino/a American youth have the lowest participation rates. Multivariate analyses of the extracurricular activities in middle childhood and adolescence, which utilized large nationally representative data sets, also have found lower rates of participation in Latino/a American adolescents (Covay & Carbonaro, 2010; Dumais, 2006; Simpkins, O'Donnell, et al., 2011).

#### ***Child Competencies and Adjustment***

Other studies have considered child competencies as predictors of participation. Methodologically stronger studies in this area are longitudinal and predict child activities at Time 2, controlling for family factors and child activities at Time 1. In analyses of this sort, Posner and Vandell (1999) found that academic performance and emotional well-being in Grade 3 (roughly 8.5 years) was linked to participation in extracurricular activities in Grade 5 (roughly 10.5 years), suggesting that more competent children are more likely to participate in activities when they are older. Competencies and adjustment also predict participation in adolescence. In one longitudinal study involving almost 4,000 Canadian high school students, Good and Willoughby (2011) found higher levels of academic achievement in one grade predicted more frequent club involvement the next year, associations that were replicated across grades. In a second longitudinal study of Canadian adolescents, Busseri, Rose-Krasnor, Willoughby, and Chalmers (2006) found developmental success (a composite variable that includes academic orientation, well-being, and interpersonal relations) predicted greater breadth of activities and greater intensity of activities almost two years later. Finally, self-esteem is a significant positive predictor of adolescents' participation in extracurricular activities (Larson, 2000). On the negative side, research conducted in Sweden found that delinquency at Time 1 predicted switching to hanging out in the streets at Time 2, measured 1 year later (Persson, Kerr, & Stattin, 2007).

Another finding is that children's level of engagement in an activity predicts subsequent participation in that activity

and other activities. Using data from the Childhood and Beyond Study, a large, longitudinal study conducted in Michigan, Simpkins, Vest, and Becnel (2010) found that children who participated in organized activities across multiple years and children who were “highly active” participants were more likely to engage in activities as adolescents.

As children move into middle school and high school, access to some structured activities also becomes dependent on children’s skill levels. Tryouts and auditions determine placement on sports teams and musical performance groups. Historically, athletics, fine arts, and cheerleading were the most closed activities in the United States; newspaper and yearbook, the most open (McNeal, 1998). The likelihood that students will participate in an activity in high school is greater if they have experience with the activity in middle school. Young people sometimes drop out of activities because of concerns that they are not “good enough” to continue the activity (Vandell, Pierce, et al., 2005).

Researchers should also keep in mind that youth are sometimes kicked out of programs. In some school-sponsored extracurricular activities, students are required to maintain a certain GPA to continue participation; and bad behavior—in the program or in other parts of their lives—can lead to them being excluded from participation. This kind of selection may contribute, for example, to the associations of participation with higher grades and with less delinquency.

There are important gaps in our understanding of other child characteristics in relation to participation in organized activities. Only a handful of studies have considered children with special needs. In one study of 427 children with physical limitations (Law, Petrenchik, King, & Hurley, 2007), children of low-SES (socioeconomic status) families were less likely to participate in organized activities than more economically privileged families. In a second study of young people who have cerebral palsy, children were more likely than adolescents and young adults to participate in activities, raising the question whether older youth feel unwelcome or otherwise excluded from these programs (Orlin et al., 2009). More research is needed on the opportunities and barriers for youth with special needs.

### **Family Characteristics That Predict Participation**

In addition to the child’s own characteristics, family factors are linked to participation in organized activities. These characteristics include demographic factors

such as parental education and family income as well as parent-child relationships and parental beliefs.

### ***Parental Education, Income, and Employment***

There are dramatic differences in participation associated with maternal education. Roughly 3 times as many children, Ages 5 to 12 years, whose mothers have a 4-year college degree are involved in sports, clubs, and lessons compared to children whose mothers did not graduate from high school (U.S. Census Bureau, 2009). Similar differences are evident for adolescents, Ages 12 to 17 years. These differences echo findings of earlier national surveys in the United States (Kleiner et al., 2004; K. E. Smith, 2002) and remain significant in multivariate analyses.

Social class and family income are similarly linked to differences in participation rates. Based on their multivariate analyses of the ECLS-K data set, Covay and Carbonaro (2010) determined that all three factors—parental education, social class, and family income—were significant predictors of extracurricular activity participation during middle childhood, findings replicated in other longitudinal studies of adolescents (e.g., Feldman & Matjasko, 2007).

These SES differences may well be mediated by less availability of programs in low-income neighborhoods, by parents’ safety concerns, and by high-income families having the discretionary income to pay program fees. Studies of elementary (Casey, Ripke, & Huston, 2005) and middle school (Hultsman, 1992) students reveal that joining an activity also is related to the availability of transportation, cultural attitudes, and needs for older children to provide child care for younger siblings. These same factors are cited as reasons for dropping out of an activity.

Lareau’s (2011) ethnographic study further illustrates social class differences in out-of-school time. Lareau conducted an intensive observational and interview study of 12 families of 10- to 11-year-olds. Children in the low-income families spent more time after school and on weekends in unstructured activities with relatives and friends, whereas the middle-class children participated in a complex array of organized activities—sports, choir, church groups, music lessons—that called for balancing time demands and performing before groups. In Lareau’s analysis, parents in the low-income families emphasized “natural growth” in which children were given freedom to go outside and play with relatives or friends. In contrast, parents in the middle-class families emphasized “concerted cultivation” and parents devoted much effort to providing their children “a steady diet of adult organized activities” (Lareau, 2011, p. 3), with the belief that these



would advance their children's development and future life chances.

Chin and Phillips (2004) have reported similar social class differences in children's summer activities, although they disagreed with Lareau's contention that working-class parents believe children's development unfolds spontaneously. Instead, they found that working-class parents faced financial and time obstacles that prevented them from involving their children in many activities.

Other reports have focused on maternal employment as an influence on participation in organized programs. Here, consistent findings are reported in several national surveys (Capizzano, Tout, & Adams, 2000; Kleiner et al., 2004; K. E. Smith, 2002). Children are more likely to attend afterschool programs when their mothers are employed, when mothers work more hours, when mothers work traditional "9-to-5" schedules, and when children reside in single-parent households rather than two-parent households.

### ***Family Processes and Beliefs***

Processes within the family context also are associated with children's participation in organized activities. Parental modeling appears to be important. Youth spend more time in organized activities when their parents are involved in community activities, and they spend less time in activities when their mothers spend more time watching television (Coulton & Irwin, 2009; Fletcher, Elder, & Mekos, 2000).

Parental beliefs also are linked to participation. Maternal beliefs about the value of sports, music, and math positively predict youth selection into these activities 1 year later (Simpkins, Fredricks, & Eccles, 2012). Parental warmth (Fletcher et al., 2000; Larson, Dworkin, & Gillman, 2001), encouragement of activities (Mahoney & Stattin, 2000), and specific instrumental support such as being able to drive children to activities (Anderson, Funk, Elliott, & Smith, 2003) are positive predictors of youth being more involved in organized activities.

Persson et al. (2007) have identified other ways in which parents influence program participation. In a large longitudinal study of Swedish youth (Ages 13 to 17 years), they determined that adolescents who switched to hanging out on the streets had less positive feelings about their families and more negative interactions with parents. Similarly, Bohnert, Martin, and Garber (2007) found negative family processes and maternal depression were related to lower rates of participation in activities. Research conducted by McGee, Williams, Howden-Chapman, Martin, and Kawachi (2006) in New Zealand identified other family

processes to be linked to program participation. In this case, positive attachment to family, friends, and school predicted participation in clubs, sports, and cultural youth groups.

Other researchers, such as Simpkins and colleagues, have utilized a mixed methods approach to identify family factors associated with organized activities. In one report, 31 Mexican American seventh-grade adolescents and their parents were studied over 1 year. Nine families were labeled as "continuous" participant families. In these families, parents valued their own experiences in organized activities as youth and encouraged their children's participation (Simpkins, Vest, & Price, 2011). In a second report (Simpkins, Fredricks, et al., 2012), focus group interviews were conducted with adolescents, their parents, and activity leaders. These interviews indicated that family financial resources and parents' work were barriers to adolescents' participation, especially for low-SES families. The physically demanding jobs and long work hours of parents also limited participation. Cultural values and practices (i.e., religiosity and language) also factored into participation.

### ***Peers and Friendship Networks***

Although less researched than individual and family factors, peers and friendship networks also have been identified as predictors of participation in organized activities. In a qualitative study involving in-depth interviews with 41 adolescents, Patrick et al. (1999) investigated the role of peer relationships in sustaining youth involvement in arts and sports activities. Quantitative analyses corroborate the qualitative data. In an analysis of the National Longitudinal Study of Adolescent Health, Simpkins, Vest, Delgado, and Price (2012) found adolescents were more likely to participate in activities if their friends were also participants and more likely to drop out of activities when their friends stopped the activities. Similar relations are reported in Sweden (Persson et al., 2007). Compared with youth who remained in organized activities, those who dropped out of the activities are less likely to have friends in their activities.

Some research suggests that the role of peers and friendships is moderated by age and cultural context. Simpkins, Vest, Delgado, and Price (2012) observed that associations between friendships and participation are stronger for European Americans than other ethnic groups, and for older adolescents than younger adolescents. In analyses that focused on within group variations in the Latin American sample of the Add Health Study, Simpkins, Vest, et al. (2011) found that youth who participated in

organized activities had higher proportions of non-Latino/a friends than did other Latino/a American youth in the sample.

### School and Community Factors

The availability of organized activities across schools and communities is highly variable, which means that young people have uneven access and opportunity to participate in different types of programs. This point is demonstrated by the Survey of After-School Programs in Elementary Schools, conducted by the U.S. National Center for Education Statistics (Parsad & Lewis, 2009). This survey reports the availability of different types of school-based after-school programs disaggregated by region of the country, type of location (urban, rural, small town), and school poverty level. Availability of four types of programs is measured: (1) fee-based stand-alone day care programs, (2) stand-alone tutoring programs such as the Supplemental Educational Services funded for schools not making satisfactory academic progress, (3) 21st Century Community Learning Centers, and (4) all other school-based programs.

This survey demonstrates that fee-based programs are primarily located in schools that serve higher income students, whereas the stand-alone tutoring programs that receive federal funds as part of Supplemental Educational Services are housed primarily in high-poverty schools. The 21st Century Community Learning Centers also are almost exclusively located in high-poverty schools. The types of activities offered by these programs differ. The fee-supported afterschool programs are more likely to offer a broader range of recreation and enrichment activities whereas the programs serving high poverty schools tend to focus on academic activities.

Other features of the school context are linked to the availability of organized activities. Larger schools and higher income schools offer more organized activities, although students are more likely to participate in activities in smaller schools compared to larger schools (Feldman & Matjasko, 2007), in rural and suburban schools versus urban schools, and in private schools compared with public schools (Marsh, 1992).

Finally, neighborhood safety ratings are related to participation. Youth are more likely to participate in programs when they and their parents perceive their neighborhoods to be safe, although participation among African American and Latino/a American youth is less inhibited by unsafe conditions than is participation by European American youth (Coulton & Irwin, 2009). Part of the reason may

be that many African American and Latino/a American parents in unsafe urban neighborhoods are highly invested in locating programs that provide safe spaces for their children after school (Jarrett, 1999).

### Program Characteristics as Predictors of Participation

Finally, program participation is influenced by how programs are structured and by the quality of youth experiences at the programs. Administrative structure and organization help to set the stage for well-functioning programs, which in turn predicts concurrent program attendance, and then higher retention rates the following year. Programs that employ directors with more advanced educational credentials, that utilize parent liaisons, and offer a strong academic component along with enrichment activities have higher concurrent program attendance rates (Blazevski & Smith, 2007) and higher retention rates the following year (Pearson, Russell, & Reisner, 2007).

Other studies have focused on young people's experiences in the programs. Youth report feelings of safety and strong relationships with staff as the most important reasons for attending a program (Halpern, Barker, & Mollard, 2000). A sense of belonging and opportunities to develop skills for the future also are commonly mentioned reasons for participation (Dawes & Larson, 2011). Finally, youth report that they are more like to participate when activities are freely chosen and enjoyable (Passmore & French, 2001).

## LINKING ORGANIZED ACTIVITIES TO CHILD DEVELOPMENTAL OUTCOMES

An important motivation for creating and funding organized activities is the belief that these activities promote psychosocial and academic competencies while limiting exposure to risky environments that promote problem behaviors. In this section, we review the quantitative literature that tests these propositions. The findings pertaining to afterschool programs are presented first, followed by studies of extracurricular activities. For each of these broad classes of organized activities, we consider effects associated with participation as well as more differentiated parameters, including the types and breadth of activities, dosage, and quality of experiences. We then turn to consideration of the child, family, and community factors that moderate linkages between organized activities and youth outcomes.

### Afterschool Programs

Studies of relations between afterschool programs and child developmental outcomes have considered a wide range of academic (grades, standardized test scores), social-emotional (friendships, identity, anxiety), behavioral (substance use, delinquency), noncognitive (task persistence, motivation), and physical (weight, physical activity) outcomes. A goal of research, conducted over the past 25 years, has been to identify conditions under which organized activities are associated with positive outcomes.

#### *Linking Program Participation to Child Outcomes*

A useful starting point in examining effects associated with participation in afterschool programs is a meta-analysis conducted by Durlak et al. (2010). This analysis, based on 68 studies conducted between 1980 and 2007, includes studies of programs serving elementary, junior high, and high school students. Thirty-five percent of the eligible studies were randomized control trials. Others utilized quasiexperimental research designs that included treatment and comparison groups. In two-thirds of the studies, effects were tested after less than a year of program dosage.

Durlak et al. (2010) found significant differences between program participants and nonparticipants in (a) self-perceptions, (b) bonding to school, (c) positive social behaviors, (d) achievement test scores, (e) school grades, and (f) reductions in problem behaviors. Effect sizes ranged from .12 to .34.

A second meta-analysis (Lauer et al., 2006) focused on effects of afterschool, before-school, and summer programs on the academic achievement of low-income students. To be included in this meta-analysis, the studies needed both treatment and control groups and direct assessments of reading and/or math achievement. Lauer et al. reported significant program effects in both domains, with an effect size of .13 for reading and .17 for math achievement.

Other large program evaluations, conducted since 2007, were not part of either the Durlak et al. (2010) or Lauer et al. (2006) meta-analyses. One of these evaluations studied the impact of After School Matters, a youth apprenticeship program that emphasized work culture and accomplishing tasks (Hirsch, Hedges, Stawicki, & Mekinda, 2011). In this randomized control trial, high school students were assigned either to an apprenticeship in technology, arts, or sports, or a waitlist control group. Nearly all of the students in the control group participated in other organized activities or paid work, thus, the comparison was to alternative treatments of unknown effectiveness. Findings indicated benefits of the apprenticeship program.

In an intent-to-treat analysis, apprentice students showed higher self-regulation and were less likely to sell drugs or participate in gang activity (effect sizes ranged from .15 to .19). Using a treated-on-treated design, apprentice students showed higher self-regulation, performed better on a mock job interview, and identified more with school, although school attendance was lower for apprentice students (effect sizes of .11 to .28).

In sum, research is consistent in showing that mere participation in afterschool programs is associated with positive outcomes, albeit with small effect sizes.

#### *Linking Program Features to Child Outcomes*

An important question is whether effects of organized activities are higher for high quality programs. To answer this question, researchers have sought to evaluate whether features of programs they thought to be related to quality (such as those discussed earlier) have greater associations with developmental outcomes.

In a follow-up meta-analysis conducted by Durlak et al. (2010), the investigators contrasted afterschool programs that met or did not meet SAFE criteria. The SAFE programs provided programming that was (a) *sequenced*—meaning that activities were connected and coordinated for skill development, (b) *active*—activities utilized “active” forms of learning, (c) *focused*—at least one component of the program was devoted to developing personal or social skills, and (d) *Explicit*—the program explicitly targeted specific personal or social skills. When SAFE programs were separated from other afterschool programs in meta-analyses, significant differences between program and comparison youth were found only for youth who attended SAFE programs. Participation in SAFE (Sequenced, Active, Focused, Explicit) programs was associated with substantially larger effect sizes for child self-perceptions, positive social behaviors, school bonding, achievement test scores, school grades, and (reduced) problem behaviors relative to comparison youth who did not attend a SAFE program.

Durlak et al.'s meta-analysis identifies one set of features of afterschool programs that are related to child outcomes (and by extension, to program quality). Qualitative research has illuminated other features that can lead to the development of socioemotional skills (e.g., responsibility, teamwork, initiative, and skills for managing emotions, Larson & Angus, 2011b; Rusk et al., 2013; Salusky et al., 2014). In many programs, participants work on projects or take on roles that actively engage them in a sequence of work over time. These provide cycles of learning through

which youth learn to persevere through unexpected obstacles, observe and learn to manage frustration, and develop skills for collaborating with peers. Program leaders provide focused and explicit input not only on the work of young people, but also on how young people approach projects.

Other quantitative research has examined additional factors associated with program quality. Blazeovski and Smith (2007) measured features such as safety, supportive environment, opportunities for interaction, and engaged learning at program sites serving almost 3,500 youth. Youth reports of a “sense of belonging” were related to higher program attendance, which then predicted higher reading achievement. “Opportunities to reflect” was also a significant predictor of reading achievement. “Opportunities to set goals and make plans” was negatively associated with long-term suspensions at school.

Pierce et al. (1999) focused on other aspects of program quality, including emotional climate, positive interactions with staff, positive interactions with peers, availability of age-appropriate activities, and programming flexibility, in relation to child developmental outcomes. They also controlled for possible confounding factors, like parenting practices in children’s families, parental income and education, and children’s functioning at the beginning of the school year. Findings showed that children who attended afterschool programs that offered more positive emotional climates (vs. less positive climates) exhibited fewer problem behaviors at the end of the school year along with improved academic performance at school, according to their first-grade teachers. Additionally, children who attended programs that offered autonomy and choice displayed gains in social skills according to their first-grade teachers. In a follow-up study of these same children over a 3-year period (Pierce et al., 2010), positive staff-child relationships in afterschool programs were associated with gains in reading grades, math grades, and social skills. Access to a diverse array of activities at the program was also linked to gains in math grades and classroom work habits at the end of the 3 years.

Other researchers have focused on negative features of programs to understand why programs have mixed success in reducing problem behaviors. In an analysis of some 3,000 5-minute intervals collected during 400 observations of afterschool programs in five public middle schools, Gottfredson and colleagues have found that when program leaders ignored deviant behavior it allowed deviant behavior to be reinforced by peers (Rorie, Gottfredson, Cross, Wilson, & Connell, 2011). They further determined that higher levels of structure in the activities were an effective

counter to peer reinforcement of deviance. More structured activities were associated with decreased levels of violence and counter-normative behavior.

Other research has confirmed the importance of program structure. In studies of Swedish recreation programs, which had few structured activities and were poorly monitored, participation (vs. nonparticipation) predicted increased antisocial behavior, including antisocial behavior assessed several years later (Mahoney & Stattin, 2000; Mahoney, Stattin, & Lord, 2004). In contrast, afterschool programs characterized by appropriate levels of adult support (programs that are not chaotic, but also not rigidly controlled) and structured skill-building opportunities are linked to gains in work habits and reductions in misconduct over the course of a school year (Vandell & Reisner, 2006). These studies also suggest that positive relationships with program leaders can deter antisocial behavior.

Research shows that other variables related to program leadership and staffing are linked to youth outcomes. In a study involving more than 4,100 young people and 78 programs, the Massachusetts Afterschool Research Study (United Way of Massachusetts Bay, 2005), for example, found higher staff education, lower staff-to-child ratios, and more structured and organized programming predicted higher staff engagement, which in turn predicted higher youth engagement and more positive youth outcomes (homework completion, initiative, positive relationships with others). These findings suggest that “regulable” factors like staff training and staff-to-child ratios can set the stage for supportive interactions and activities.

Again, qualitative research has illuminated how these factors make a difference on the ground in the daily interactions of youth with program leaders. The Hirsch, Hedges, et al. (2011) study shows how positive (vs. negative) interactions with staff influence young persons’ feelings of safety, their engagement in program activities, and their trust in staff advice and instructions. Deutsch and Jones (2008) provide a nuanced account of how the dynamics of trust and respect can differ for African American and European American children. And Larson and Walker (2010) identify the wide array of unexpected challenging situations that staff navigate, situations for which staff engagement, education, and lower staff-to-child ratios can make a difference between youth being turned off by a program versus having valuable learning experiences.

The ultimate test, however, is whether changing staff practices influences program outcomes. Sheldon, Arbretton, Hopkins, and Grossman (2010) studied the effects of continuous program improvement efforts (targeted staff



training throughout the year, regular observations and coaching of staff, and the use of data to measure progress) to improve the quality of afterschool literacy activities in a multisite afterschool program in California. They found that these interventions increased program quality, as measured through observations. Furthermore, the size of students' reading gains was positively correlated with the quality of literacy programming provided by each instructor.

In sum, research is beginning to provide a foundation of evidence that relate the features of programs to positive child developmental outcomes. These include characteristics of the activities—such as the SAFE features—and the training of staff and their abilities to provide appropriate structure and supportive relationships. Whether this potential is realized, however, may depend on how often and for how long young people attend programs, the next dimension that we consider in relation to child developmental outcomes.

### ***Linking Program Dosage to Child Outcomes***

Dosage includes both the intensity and duration of program participation. Intensity can be defined by hours/day, days/week, and total number of attendance days. Research syntheses of findings related to program intensity are now available. A limitation of these studies is that program quality was not typically considered.

In Lauer et al.'s (2006) meta-analysis of programs targeting academic achievement of at-risk students (discussed previously), follow-up analyses determined that significant program effects in reading and math achievement were evident only when programs exceeded a minimum dosage (44 hours in reading and 45 hours in math). In other work, Roth et al. (2010) conducted a research synthesis examining participation in "formal afterschool programs." Their focus was on 35 studies of programs that served elementary school children and that met on a regular basis throughout the school year, were supervised by adults, offered more than one type of activity (e.g., homework help, recreation, arts and crafts), and were structured around group-based activities. Studies that did not control for child performance at baseline and did not control for family preexisting differences were excluded from the analysis. Most of the studies examined concurrent associations between program dosage and child outcomes.

Roth et al. considered four outcomes: (1) academic performance (21 studies); (2) school attendance (11 studies); (3) problem behaviors (13 studies); and (4) peer relations (13 studies). They found that intensity of program

participation, defined as days or hours per week, was significantly related to gains in academic performance in 24% of the studies in which it was assessed. It was related to gains in school attendance in 64% of the studies, reductions in problem behaviors in 38%, and to positive peer relationships in 31% of the studies in which each was assessed.

Roth et al. (2010) also considered effects associated with the duration of program participation, defined as more than one year of participation versus one year or less of participation. In the 12 studies they identified that met their selection criteria, 42% reported significant associations between program duration and academic performance, indicating larger effects when children attended programs for more than one year.

An evaluation of The After-School Corporation (TASC) programs in New York City yielded similar findings (Reisner et al., 2004). Data collection occurred over 4 school years and included 52,000 afterschool participants and 91,000 students enrolled in the host schools who did not participate in TASC. Observations confirmed that the programs offered a broad array of enrichment opportunities, had positive relationships with their host schools, offered staff training, and had strong and experienced leader/managers. The investigators found gains in mathematics achievement for youth who attended the programs more regularly. Effect sizes were .13 for 1 year of active participation and .79 for 2 years of active participation.

In sum, findings suggest outcomes of afterschool programs are a function of both the intensity and duration of a young person's participation, with some evidence of larger effects when program quality is also high.

### ***Extracurricular Activities***

Research that has examined extracurricular activities shows somewhat similar relations between participation and child developmental outcomes as observed in studies of afterschool programs. In contrast to the work involving afterschool programs, much of the available research on extracurricular activities is based on nationally representative longitudinal surveys, not program evaluations. Consequently, there are fewer experimental and quasi-experimental studies, and more correlational analyses.

Findings from the studies of extracurricular activities, like the studies of afterschool programs, can be organized around participation and dosage. In addition, studies of extracurricular activities have examined the effects associated with specific types of activities such as sports and arts. The quality of youth experiences in their extracurricular activities has been only rarely assessed and is limited to

youth-report measures. One strong point of the literature examining extracurricular activities is that it includes large longitudinal studies in which young people have been studied into adulthood. This work enables us to examine whether extracurricular activities provide youth with human and social capital that benefits them in college completion and adult employment. In these studies, human capital is reflected in the concurrent and longitudinal measurements of academic, cognitive and noncognitive outcomes, whereas social capital is reflected in the development of social relationships with adults and peers who provide long-term instrumental and emotional support.

### ***Linking Participation in Extracurricular Activities to Child Outcomes***

As is the case with research on the effects of afterschool programs, much of the early research on the effects of extracurricular activities asked if mere participation (a yes/no variable) predicts child developmental outcomes. Three research syntheses, all focusing on extracurricular activities in adolescence, have asked this question. Holland and Andre (1987) provide a critique of 31 studies that were published prior to 1981. A research synthesis by Feldman and Matjasko (2005) examined 36 new publications on this topic that were published between 1981 and 2004. A third research synthesis prepared by Farb and Matjasko (2012) reviewed an additional 52 papers published between 2005 and 2009.

In all three reviews, the conclusion is that extracurricular activities are consistently related to more positive youth outcomes, and this relationship extends into the post-high school years. These outcomes include higher grades, school bonding, self-esteem, psychosocial adjustment, positive peer networks, college plans, college completion, and adult employment. These reviews also conclude that participation in extracurricular activities is linked to fewer negative outcomes such as tobacco, alcohol and drug use, antisocial behavior, and truancy.

Over time, the studies included in these syntheses have become more rigorous analytically and now routinely incorporate controls for selection, including youth behavior at baseline. Fixed effects analyses and replication across different data sets lend further credence to the findings. Nonetheless, some important caveats should be applied to these findings. Much of this literature is based on secondary data analyses of the same data sets, so these analyses are not independent replications. Another limitation is that much of the data was collected in the 1980s and 1990s, and cohort differences may have occurred.

### ***Linking Specific Types of Extracurricular Activities to Child Outcomes***

Other studies, sometimes utilizing the same national data sets, have examined relations between specific types of extracurricular activities (e.g., sports, performing arts, leadership) and child developmental outcomes. In their analyses of the Michigan Study of Adolescent Life Transitions, a longitudinal study involving more than 1,200 youth, Eccles and Barber (1999) found participation in leadership activities and academic clubs in Grade 10 was associated with a greater likelihood of attending college full time after high school graduation, whereas community service in Grade 10 was linked to reduced use of alcohol and marijuana in Grade 12, controlling for substance use at baseline. Community service, leadership activities, and performing arts during Grade 10 predicted higher rates of graduation from college, controlling for maternal education and student math and verbal ability. Community service also predicted higher self-esteem and lower use of alcohol and marijuana 6 years later.

In a second longitudinal project, the Maryland Adolescent Development in Context Study, Fredricks and Eccles (2008) examined the associations between extracurricular activities during early adolescence and adjustment in a diverse sample of African American and European American youth. Controlling for child and family characteristics measured in Grade 7 prior to activity involvement, participation in school clubs in Grade 8 predicted gains in resiliency and prosocial peers in Grade 11. Participation in sports in Grade 8 predicted an increase in resiliency, but a decrease in valuing of school.

Others have focused on participation in organized sports using the National Education Longitudinal Survey (NELS) and the Education Longitudinal Study (ELS). This work shows participation in school sports in Grade 10 to predict higher math scores and higher expectations for going to college in Grade 12 (Dumais, 2008). In other longitudinal analyses of the NELS, sports, as well as academic extracurricular activities, predict educational attainment and earnings 10 years later (Lleras, 2008). Relations between sports activities and other outcomes such as alcohol use are more variable, and appear to depend on the school environment and peer networks at the school.

A separate body of research is developing around the study of extracurricular activities in middle childhood. The Early Childhood Longitudinal Study-Kindergarten (ECLS-K) survey includes measures of specific extracurricular activities and child developmental outcomes during

the elementary school years. Using this data set, Dumais (2006) examined participation in activities during kindergarten, first, and third grades and found both sports and dance activities were linked to gains in reading scores, controlling for SES, gender, ethnicity, and kindergarten reading scores. Using this same data set, Covay and Carbonaro (2010) found participation in sports and dance to predict gains in children's noncognitive skills such as approaches to learning.

A general finding, then, is that many different kinds of activities are related to positive outcomes. What is less clear, to date, is whether specific types of activities are systematically and consistently related to different sets of outcomes.

#### ***Linking Breadth of Extracurricular Activities to Child Outcomes***

The idea that a more diverse set of activities is beneficial for children's development has also been studied. *Breadth* is defined as the number of different types of activities that a youth participates in. Breadth is believed to be important because it exposes young people to a broader array of adults, peers, and opportunities than is afforded by a single activity, even one engaged in for a similar amount of time.

Busseri and Rose-Krasnor (2009) tested this hypothesis in fifth- and seventh-grade students who reported the frequency of involvement in six types of activities (e.g. school sports, volunteering), controlling for intensity or net amount of time in all the activities. Breadth, but not intensity, was uniquely and positively predictive of academic engagement and of fewer risk behaviors, controlling for family and prior functioning. In other work, Busseri et al. (2006) found that breadth (assessed 20 months earlier) and increases in breadth over the 20 months predicted increases in a composite measure of successful development, as well as decreases in risk behavior.

Bohnert and Garber (2007) examined similar issues in older youth and found that the total number of organized activities (i.e., breadth of activities) served as a protective factor for psychopathology at the end of high school, controlling for earlier problem behaviors. Breadth of activities in high school also predicted fewer externalizing symptoms, less tobacco use and less substance abuse in Grade 12, findings which are similar to those reported by others (Denault & Poulin, 2009; Fredricks & Eccles, 2006).

Breadth of extracurricular activities also has been studied using cluster analyses, a person-centered analytic technique. In a study of low-income Canadian children, Morris and Kalil (2006) identified five groups of children

based on their clusters of activities: (1) *high clubs*, (2) *high sports*, (3) *high sports and clubs*, (4) *high sports, clubs, and lessons*, and (5) *low sports, clubs, and lessons*. Similar clusters were identified by Linver, Roth, and Brooks-Gunn (2009) in their examination of activity patterns of youth in the Panel Study of Income Dynamics and also in other studies of children and adolescents that used other data sets (Bartko & Eccles, 2003; Vandell et al., 2006; Zarrett et al., 2009).

In these analyses, consistent findings are found. Youth who are involved in multiple organized activities demonstrate more favorable academic and psychological adjustment and fewer risk behaviors than children who are involved in a single activity, who fare better than children who are not involved in any activities.

#### ***Linking Dosage of Extracurricular Activities to Youth Outcomes***

Questions about dosage of extracurricular activities—measured as minutes, days, or years—have centered on two issues. The first issue is whether there is a level of exposure at which youth who participate in extracurricular activities become overscheduled. That is, can the amount of time spent in organized activities become excessive and detract from schoolwork or foster psychological distress? This concern has been referred to as *the over-scheduling hypothesis* (Mahoney, Harris, & Eccles, 2006). An alternative hypothesis, *more is better* posits that benefits of extracurricular activities accrue in a linear form in which more time in activities is related to more positive outcomes.

Because youth are not assigned to participate for different amounts of time, the methodology used to evaluate the overscheduling versus more-is-better hypotheses ordinarily involves a comparison of outcomes among youth participating at different levels of intensity. Mahoney et al. (2006) reviewed existing research and conducted their own investigation that involved an analysis of the time diary information in the Panel Study of Income Dynamics. Results of their analyses indicated that (a) youth, Ages 12 to 18, primarily participate in organized activities for intrinsic reasons (e.g., excitement and enjoyment, to build competencies, and to affiliate with peers and activity leaders), (b) pressures from adults or educational and career goals are seldom given as primary reasons for participation, and (c) findings show consistent, strong evidence of positive linear associations between participating in organized activities and multiple indicators of positive development. Spending greater time in activities was related to increased benefits.

A longitudinal follow-up of these same youth at Ages 18 to 24 (Mahoney & Vest, 2012) showed similar linear relation. Controlling for demographic factors and baseline adjustment, intensity was a significant predictor of positive outcomes (e.g., psychological flourishing, civic engagement, educational attainment) and unrelated to indicators of problematic adjustment (e.g., psychological distress, substance use, antisocial behavior) at young adulthood.

Other longitudinal studies that utilized national and regional data show similar relations between intensity of activities and positive psychological and school-related adjustment. For example, Fredricks (2012) evaluated the over-scheduling hypothesis using data from a large, national representative sample of youth from the Educational Longitudinal Study. In 10th grade, students self-reported the overall hours/week they spent in activities. The average amount of time spent in extracurricular activities was about 5 hours per week, with only a very small proportion of youth (3.3%) reporting more than 20 hours per week in activities. Tenth-grade students' self-report of the overall number of hours/week they participated in school-sponsored activities predicted positive academic outcomes such as math achievement and educational status at Grade 12 and 2 years post-high school for students participating up to 14 hours/week (89% of the sample). Thereafter, academic outcomes declined somewhat as intensity increased. However, even youth at the highest level of intensity showed significantly better academic adjustment than the large of number of youth who were uninvolved in any school activities.

Using data from the National Education Longitudinal Study (NELS), Gardner, Roth, and Brooks-Gunn (2008) assessed high-school students' intensity of participation in school- and community-based activities in relation to outcomes at young adulthood. In general, intensity of participation, particularly when measured over a 2-year period, was positively associated with educational attainment, civic engagement, and occupational outcomes up to 8 years after high school. For a few outcomes, the positive association reached a plateau or decline at very high intensity (i.e., close to 20 hours/week), but this was the exception.

Regional longitudinal studies show similar findings. For instance, Bohnert and Garber (2007) found more time in extracurricular activities was related to fewer externalizing behaviors and less tobacco and substance use in Grade 12, controlling for psychopathology before high school. Likewise, Dotterer, McHale, and Crouter's (2007) longitudinal study of African American adolescents

showed that more time spent in extracurricular activities was positively related to self-esteem and school bonding. Moreover, a longitudinal investigation by Denault and Poulin (2009) found that participation intensity, in a sample of mostly European American, middle-class, Canadian early adolescents in Grades 7 to 11, was positively related to subsequent ratings of school commitment and values towards society. Similar positive linear relations have been found in middle childhood. Amount of time in enrichment activities in Grades 3 to 5 predicts positive changes in children's emotional adjustment in Grade 5 (Posner & Vandell, 1999).

When the body of research is considered in aggregate, the answer to the question of whether North American youth are overscheduled in organized activity participation appears to be "No" for the vast majority of youth who have been studied. Although some outcomes suggest diminishing returns as intensity increases, participation is generally associated with benefits for children and adolescents.

### *Linking Consistency of Participation to Child Outcomes*

Consistency of participation has been used to distinguish between sporadic versus more sustained participation in extracurricular activities. Summing or averaging hours over time does not tell us if youth are involved in activities sporadically but intensively or involved regularly but with less intensity. To make this distinction, consistency has been measured by assessing participation at regular intervals (called *epochs*) and by determining the proportion of epochs in which participation occurs.

Findings from the NICHD Study of Early Child Care and Youth Development (SECCYD), a prospective longitudinal study of more than 1,300 youth, suggest that consistent participation in organized activities confers academic advantages for children during middle childhood (NICHD Early Child Care Research Network, 2004). Children who consistently participated in organized activities during kindergarten and first grade had higher scores on a standardized math test at the end of first grade, compared to children who never or only sporadically participated in structured activities, controlling for numerous individual, family, and school factors, including math scores prior to kindergarten. Almost all of these activities had a nonacademic focus—sports, music lessons, and clubs like Daisy scouts, and the absolute amount of time spent in the activities was modest, about 90 minutes a week.

Auger et al. (2013) extended the study of consistency of participation in the SECCYD data set by examining structured afterschool activities from kindergarten



through Grade 5. Controlling for child functioning prior to kindergarten and other child, family, home, and school characteristics, these investigators found that more consistent activity participation in organized activities predicted higher report card grades, work habits, and mathematics achievement in Grades 3 and 5.

Consistency in participation in middle school and high school has also been linked to positive educational outcomes. Mahoney, Cairns, and Farmer (2003), for example, assessed consistency in participation across Grades 7 and 8 (early adolescence) and Grades 9 and 10 (middle adolescence), which were then related to educational status at Age 20. In regressions that controlled for child gender, SES, interpersonal competence in both middle school and high school, and educational aspirations at age 18, consistency of participation in both middle school and high school (none, 1 year, or 2 years at each school level) predicted enrollment in college at Age 20. Path analyses indicated that consistency was associated positively with interpersonal competence in middle adolescence, educational aspirations at Age 18, and educational status at Age 20.

These findings are similar to those found in the National Education Longitudinal Study (Zaff, Moore, Papillo, & Williams, 2003). More consistent participation in extracurricular activities from 8th through 12th grade predicted academic achievement and prosocial behaviors in young adulthood, including attending college, voting in national and regional elections, and volunteering for community and religious organizations. These relations remained after accounting for control and individual, parent, peer, and school process variables.

Examining older youth, Darling, Caldwell, and Smith (2005) also found that consistent participation in high school extracurricular activities (sports, performing arts, leadership groups, interest clubs), across two school years was predictive of higher grades, greater educational aspirations, and better attitudes toward school compared to students who did not participate in the activities, controlling for adjustment in the first year and youth and family factors (grade, sex, ethnicity, parent education).

### ***Linking Quality of Extracurricular Activities to Child Outcomes***

The research we reviewed earlier in this section showed that measures of the quality of afterschool programs, as measured by proximal processes, are linked to youth outcomes. Given those findings, it is unfortunate that few studies have evaluated quality of proximal processes in extracurricular activities. One reason is that the large national data sets,

the data sources for many of the studies, have not included these types of measures.

The available quantitative literature, coupled with qualitative studies, suggest that youth reports of the quality of their experiences in extracurricular activities are linked to child developmental outcomes. In one study (Kataoka & Vandell, 2013a), middle school youth reported the quality of their experiences at their primary afterschool activity over a 2-year period. Youth reports of more positive experiences (a composite that included emotional support from adult staff, positive relationships with peers, and opportunities for autonomous activities) were associated with gains in work habits, task persistence, and prosocial behavior with peers as reported by classroom teachers, controlling for family factors and student pretest scores. Similarly, Rutten et al. (2008) found that youth reports of the quality of relational support from the coach, exposure to sociomoral reasoning about sports dilemmas, and positive attitudes about fair play predicted both on the field and off field antisocial and prosocial behaviors. These findings mirror those for afterschool programs, showing that supportive staff and structured activities that allow youth agency are features of program quality.

Other studies have begun to focus on the role of the child's developing competencies as mediators of relations between extracurricular activities and child developmental outcomes. An example is the research by Covay and Carbonaro (2010) that asked whether relations between extracurricular activities and academic achievement in middle childhood are mediated by children's noncognitive skills. In analyses that controlled for family background and child performance at baseline, these investigators found participation in sports, clubs and music predicted gains in math scores, relations that were partially mediated by the children's noncognitive skills (a composite measure of approaches to learning that included attentiveness, organization, flexibility, task persistence, learning independence, and eagerness to learn). Participation in clubs and music activities predicted significant gains in reading scores, and these relations were also partially mediated by gains in the children's noncognitive skills.

In other research, Simpkins, Eccles, and Becnel (2008) have explored relationships with peers as a potential mediating mechanism. They tested the hypothesis that associations between breadth of activities and developmental outcomes are mediated by peer group relations. In their longitudinal analyses, breadth of activities (sports, religious, volunteering, community, school) was assessed when youth were in Grade 7 (Time 1). Friends' positive

characteristics were then measured in Grade 8 (Time 2), and youth outcomes (depressive affect, problem behavior, alcohol use, and self-worth) were measured at Time 3 (Grade 9 in one sample and Grade 10 in the second sample). As they hypothesized, youth who participated in a larger number of activities at Time 1 demonstrated more positive developmental outcomes at Time 3 (that is, less depressive affect and problem behavior and more positive self-worth), and these relations were mediated by friends' positive characteristics at Time 2.

Gardner, Roth, and Brooks-Gunn (2009) identified negative peer processes as another factor to consider in understanding effects of extracurricular activities. In their study of a large sample of urban adolescents, they compared youth who participated in sports to those who only participated in nonathletic activities and to those who did not participate in any organized activities. The odds of nonviolent delinquency were higher among boys who participated in sports when compared to boys who participated only in nonathletic activities but less than that of boys who did not participate in any organized activities. Two peer processes—friendships with deviant peers and unstructured socializing—mediated the relation between sports participation and boys' nonviolent delinquency, especially for boys with earlier externalizing problems. Similar findings have been reported by Gottfredson, Gerstenblith, Soule, Womer, and Lu (2004) who found afterschool program participation diminished substance use and that this relation was mediated by intentions not to use drugs and more positive peer associations for program participants.

Although not well tested, positive peer processes may also contribute to desirable developmental outcomes. Organized programs have long viewed constructive peer interactions as a vehicle for cultivation of positive development (Halpern, 2002). Based on quantitative findings, Barber, Stone, Hunt, and Eccles (2005) suggest that activities can "provide peer group niches in which adolescents may do the work of co-constructing values and identities" (p. 204). Qualitative research has described how youth in programs learn through talking out loud to each other, analyzing situations collaboratively, sharing information and feedback, and observing and comparing each other's experiences (Heath, 1998; Larson et al., 2012; Perry, 2013).

### **Combining Type, Quantity, and Quality of Organized Activities**

Almost all of the available research examining associations between organized activities and youth outcomes has

focused on quantity *or* type *or* quality of organized activities. Examination of these three dimensions in the same study or in the same analyses is limited. Such examinations are needed if we are to identify whether dimensions are uniquely associated with youth outcomes.

Analyses by Li and Vandell (2013) suggest the utility of such an approach. These investigators determined that quality, type, and amount of organized activities were each significant predictors of child developmental outcomes, controlling for the other dimensions. Intensity of participation (measured as days per week) predicted later gains in the Woodcock Johnson Applied Problems (mathematics) achievement and assertiveness, whereas youth reports of the quality of the activities were associated with decreases in internalizing problem behaviors and externalizing problem behaviors, and these relations were embedded within different types of activities.

### **Moderators of Organized Activities**

Thus far in this section, we have focused on various aspects of young people's experiences in organized activities (their type, breadth, intensity, duration, consistency, and quality) as "main effects" in relation to academic and social outcomes. Now we review the research evidence that considers whether relations between organized activities and child developmental outcomes vary as a function of the child's own characteristics and dispositions, their family circumstances, the broader school and community context, and the broader cultural context. In contrast to the large corpus of research examining "main effects" of different aspects of organized activities, systematic investigation of moderated relations is less well developed.

Examinations of moderated relations have considered two hypotheses. The first is that effects of organized activities are larger for youth who are at risk because of individual, family, or community circumstances. This hypothesis is consistent with a view that organized activities can play compensatory or protective role in children's development. A rival hypothesis is that effects of organized activities are larger for youth who are advantaged as a result of individual, family, or community circumstances, and thus are positioned to derive greater benefit from organized activities.

We start by considering children's own individual characteristics as moderators of the effects of organized activities on child developmental outcomes. We then turn to family characteristics and conclude by examining school and neighborhood as moderators.

### *Gender and Ethnicity*

Two individual demographic variables (gender and ethnicity) have been examined as moderators of relations between organized activities and child development outcomes. Although the research literature is modest, there are suggestions that organized activities are more impactful for boys than girls (Pierce et al., 1999; Pierce et al., 2010; Posner & Vandell, 1999). In these studies, associations with positive settings (and with negative settings) are greater for boys than for girls. A similar pattern has been reported by Urban, Lewin-Bizan, and Lerner (2009) in their longitudinal analyses of organized activities during adolescence. More research on possible gender differences in effects of organized activities is needed.

Researchers have also studied ethnicity as a moderator of organized activities. Again, research is limited. In a longitudinal study of low-income urban African American and European American children, Posner and Vandell (1999) found larger positive associations between amount of time spent in extracurricular activities and academic performance and social competencies in an African American sample than a European American sample. In other work that draws from the Panel Study of Income Dynamics, Mahoney et al. (2006) found intensity of organized activities was more highly associated with reading achievement gains in African American youth than in European American youth. In contrast, analyses of the National Education Longitudinal Study of 1988 (NELS 88) found relations between extracurricular activity involvement and achievement were higher among European Americans, especially in the area of math (Gerber, 1996). The discrepancies between the studies could be attributed to a wide range of reasons including SES, the nature of programs experienced by these different groups, or how well the program was matched to the cultural assets of each group. Mixed method and within group analyses are needed to understand how experiences, proximal processes, and fit play out for youth from different cultural backgrounds.

### *Child Prior Adjustment*

Other studies have asked if program effects are larger for youth who are at-risk because of earlier behavior problems. In one study, Mahoney (2000) identified four groups of youth, based on cluster analyses of physical maturity, aggression, popularity, academic achievement, and SES. Students in the high-risk group were more likely than students in other configurations to show antisocial patterns in young adulthood. However, participation in school-based

extracurricular activities during Grades 6 to 10 was associated with reduced rates of school dropout and criminal arrest among the high-risk students. Program participation appeared to be a protective factor for these at-risk youth.

Kataoka and Vandell (2013b) studied individual psychological dispositions as moderators of effects of organized activities in a sample of low-income youth who were studied over a 2-year period. Participation in organized activities over 2 years, compared to low supervision after school, was particularly beneficial for youth who exhibited high oppositional defiance at baseline. At follow-up, organized activities served as a protective factor against drug use and school absences for youth who had been reported by parents as being oppositional and defiant.

Other research, conducted as part of the 4-H Study of Positive Youth Development (Urban et al., 2009), reveals an additional complexity in which both youth characteristics and community characteristics interact in relation to child developmental outcomes. For young people growing up in low asset neighborhoods, the ability to self-regulate placed youth in a stronger position to benefit from extracurricular activities, compared to their peers with less capacity to self-regulate. This suggests that although program participation can be protective for at-risk youth, youth who have certain level competencies may benefit most. An important question is how the design of programs might make them better suited to the needs, culture, and assets of different populations.

### *Family Circumstances*

Family circumstances are potential moderators of the linkages between organized activities and child developmental outcomes. In secondary analyses of the Early Childhood Longitudinal Study–Kindergarten Cohort (ECLS-K), Covey and Carbonaro (2010) determined that extracurricular participation between kindergarten and Grade 3 predicted larger gains in noncognitive skills for low-income children than for higher-income children, controlling for numerous child and family factors and for child performance at baseline.

Similar findings, pointing to larger gains for low-income children, have been reported in the Study of Early Child Care and Youth Development (Auger et al., 2013). In this study, consistent participation in organized activities was more highly associated with math achievement test scores for low-income children than for middle-income and high-income children, controlling for numerous child and family background characteristics. There were no differences in the scores of low-income and high-income

children who consistently participated in organized activities, but large differences in the math scores of low-income and high-income children who rarely participated in activities.

Differential effects associated with family income also have been found in a longitudinal study conducted in Australia (Blomfield & Barber, 2011). Relations between extracurricular activities and self-concept and feelings of self-worth were larger for low-income students than for high-income students. These and other findings generally support the compensatory hypothesis: that the benefits of organized activities are greater for economically disadvantaged and at-risk youth. Given the evidence (as shown in the fourth section of this chapter) showing that low-income youth have *less access* to organized activities, these findings suggest that increased attention should be given to the role of high-quality organized activities in reducing the persistent achievement gap separating low-income and middle-income youth.

### *School and Community*

Organized activities are embedded within the broader school and community context, and these contexts also appear to moderate relations between organized activities and youth and child developmental outcomes. Work by Urban et al. (2009) found that neighborhood assets, measured as percent of college educated residents and presence of local libraries, moderate effects of participation in organized activities on child developmental outcomes. Additionally, these researchers found that girls living in low-asset neighborhoods derived greater benefits from their participation in organized activities than did girls living in high-asset neighborhoods, reflected in more positive youth development outcomes and less risk taking. Boys living in high-asset neighborhoods derived greater benefit from organized activities than did boys living in low-asset neighborhoods. Boys who lived in low-asset neighborhoods and participated in organized activities engaged in more risk taking behaviors than other boys in their community, a finding that is consistent with observations reported from McCord (1992) and Dishion, McCord, and Poulin (1999) of peers encouraging and reinforcing deviant behavior. A critical challenge for organized activities is the development of programming that supports positive youth development without inadvertently promoting deviant and antisocial behaviors.

A study by Guest and Schneider (2003) suggests that the effects of participation are also moderated by the school context. In this research, high school students who

participated in sports attained a higher GPA and held greater educational expectations compared to students who did not participate in any extracurricular activities, controlling for gender, ethnicity, grade level, parent education, course sequence in math, and delinquency. However, the effects of sports involvement differed by the school context. Being seen by others in the school as athletic, which was linked to sports involvement, had a positive association with GPA in schools where a smaller proportion of students went to college after high school graduation, but a negative association with GPA in schools where most students went to college.

Finally, effects of sports and other organized activities are embedded within the broader cultural context. Analyzing data from the Trends in International Mathematics and Science Study (TIMSS) 2003, Won and Han (2010) found that playing sports was a positive predictor of achievement in the United States, but a negative predictor in South Korea. In contrast, doing homework was a negative predictor in the United States but a positive predictor in South Korea. The meaning of the activities appeared to be embedded within the cultural context.

## UNSUPERVISED OUT-OF-SCHOOL TIME

The previous sections of the chapter focused on organized activities. The primary rationale for the development of organized activities stem from concerns about what happens to young people when they are unsupervised during out-of-school time. In this section, we describe research findings obtained in two types of unsupervised time: (1) self-care and (2) unsupervised time with peers. Paralleling the organization of research pertaining to organized activities, we first examine the factors that predict participation in unsupervised time. We then review the evidence of relations between unsupervised time and child developmental outcomes. Finally, the moderating influences of child, family, and neighborhood characteristics on unsupervised time are considered.

Several distinct approaches have been taken in defining unsupervised time. Whereas some work has designated a child as “unsupervised” if he/she spends as little as 30 minutes per week without adult supervision (Lovko & Ullman, 1989), other research has asked parents to report if self-care is used “regularly” or consistently each week (e.g. Aizer, 2004; Messer, Wuensch, & Diamond, 1989; Posner & Vandell, 1994). Some qualitative work has highlighted blurred boundaries between “supervised” and “unsupervised” care, emphasizing the complexity



and fluidity of these care arrangements (Belle, 1999). In reviewing literature on unsupervised time in this chapter, we will denote the various operational definitions used to classify a child as “unsupervised,” and we consider how these conceptualizations result in different interpretations of the effects of unsupervised time.

### Self-Care

An estimated 4.2 million children (Ages 5 to 14) care for themselves on a regular basis in the United States (Laughlin, 2013). As might be expected, the use of self-care increases with age. An estimated 5% of elementary aged children regularly care for themselves for part of the afterschool hours compared to 27% of middle-school and high-school aged children (Laughlin, 2013). The amount of time spent in self-care averages 7 hours each week. Again, increases with age are found, with middle-school and high-school youth spending more than 10 hours per week in self-care. These figures point to the need to understand the effects of unsupervised time.

In order to identify the factors that lead families to use self-care as a regular arrangement during the after-school hours, we examine Casper and Smith's (2004) analysis of Survey of Income and Program Participation (SIPP), a nationally representative dataset. Using OLS regression models, they found that three primary factors predicted higher rates of self-care use: (1) availability of parents and other adults to care for children, (2) the child's level of responsibility and maturity, and the (3) neighborhood context. They found ability to pay for childcare was not related to the choice of self-care, a finding that has been replicated in subsequent papers (Shumow, Smith, & Smith, 2009). Furthermore, self-care is related to child and family characteristics in predictable ways. Single parents and parents with older children are more likely to use self-care. Similarly, neighborhood safety and higher maternal work-hours are associated with more time in self-care for older children, but not younger children.

Other research has examined the effects of self-care on important developmental outcomes. The weight of the evidence indicates that time spent in self-care is associated with negative child outcomes. In one study of eighth graders from Southern California, youth who spent more time in self-care after school showed poorer grades, more risk taking behavior and evidence of substance use (Dwyer et al., 1990). Furthermore, children who began spending time in self-care during elementary school showed the greatest risk of substance abuse problems.

Similarly, Marshall et al. (1997) found that children from lower-income families who spent substantial time in self-care exhibited greater externalizing problems than students who attended after-school programs or remained in the care of their parents.

In analyses that incorporated multiple controls for selection effects and utilized a family fixed effects analytic strategy, Aizer (2004) used the National Longitudinal Survey of Youth–Child-Mother file to examine the effects of self-care on youth Ages 10 to 14. The prospective longitudinal design of the data is such that Aizer's sample was predominantly low-income and disproportionately children of adolescent mothers. The analysis focused on four problem behaviors: skipping school, getting drunk or high, stealing, and violence. Unsupervised time was classified dichotomously based on maternal reports of whether there was no adult regularly present when the child returned home from school. Lack of supervision predicted poorer school attendance, greater alcohol or marijuana use, and more problem behaviors, problems that were exacerbated in single-parent households and when mothers had not graduated from high school. Family fixed analysis showed that, within the same family, children who received more supervision were less likely to exhibit problem behavior.

### Unsupervised Time With Peers

Unsupervised time with peers, sometimes called “hanging out with peers,” is a second form of unsupervised out-of-school time (Osgood, Anderson, & Shaffer, 2005). Routine Activity Theory from the field of criminology has particularly influenced research questions related to unsupervised time with peers (Cohen & Felson, 1979). According to Routine Activity Theory, there must be a “perfect storm” in order for an individual to commit a crime. This perfect storm involves the convergence of three factors: a motivated offender, a suitable target, and the absence of guardians capable of preventing the act. Thus, crime is committed when opportunities arise in congruence with every day, routine activities.

Osgood, Wilson, Bachman, O'Malley, and Johnston (1996) extended Routine Activity Theory to juvenile crime and misbehavior. Drawing on Briar and Piliavin's (1965) formulation of situational motivation, which suggested that crime is not inherent in the person but rather in the situation, Osgood et al. argued that youth deviance would arise when youth were (a) without adult supervision, (b) “hanging out” with a lack of structure, and (c) in the presence of peers.

Although Osgood's theory has had a sizeable impact on current conceptualizations of unsupervised time, the importance of peer influence on unsupervised activities is not a new concern. Steinberg's (1986) early study of "latchkey" adolescents found important distinctions between the contexts in which unsupervised youth spent their time after school. Steinberg contrasted youth who were home after school, those who were unsupervised at a friend's house, and those who were "hanging out" in other settings. Results indicated that youth who were not at home and on their own were most susceptible to peer pressure. Steinberg theorized that youth who were at home could still be indirectly monitored by their parents through telephone calls or neighbors. However, as youth spent time with peers in other unsupervised settings, susceptibility to experiencing peer pressure increased.

Similar findings were reported by McHale, Crouter, and Tucker (2001) who determined that unsupervised "hanging out" with peers was associated with lower grades and higher amounts of negative behavior whereas time spent alone in self-care was not related to behavioral problems or poor grades. Similarly, Goyette-Ewing (2000) found that children who spent time "hanging out" with peers in unsupervised settings had lower school achievement, were more susceptible to peer pressure, had higher levels of self-reported problem behavior, and were involved in more experimentation with alcohol when compared to both supervised children and self-care children.

Research has begun to investigate family and neighborhood characteristics as moderators of unsupervised time with peers. Maimon and Browning (2010) found that relations between unsupervised time with peers and youth violence were moderated by neighborhood collective efficacy. Higher levels of neighborhood efficacy were associated with a reduction in the likelihood of an adolescent's violent offending even when youth spent time with unsupervised peers. Similar results were reported by Coley, Morris, & Hernandez (2004), who determined that negative effects of unsupervised times with peers were mitigated by parental monitoring and neighborhood collective efficacy.

Research conducted in unsupervised settings has highlighted a very different developmental context than the one offered by organized activities. While participation in organized activities is found to be associated with positive developmental outcomes, time spent in unstructured and unsupervised settings is associated with negative outcomes. The controlled studies we reviewed in the prior section demonstrate that the benefits of organized

activities are related to the *quality of experiences* youth have in organized contexts—they are not just a "holding pen" in which to keep young people out of trouble. Nonetheless, part of the value of organized activities may be that they lessen the amount of time that youth spend in unsupervised settings.

## CONCLUSIONS AND FUTURE DIRECTIONS

What happens in organized activities is decidedly different from what youth experience in classrooms during a typical school day and what they experience during informal leisure and unsupervised time with peers. Organized activities provide a space in which young people can follow their interests in areas as diverse as swimming, basketball, science clubs, computer graphics, dance, political activism, community service, band, and chess, and to build skills in these areas over time. In contrast to school classrooms, they provide more opportunities for self-regulated learning and experiences of self-efficacy as a learner. In contrast to informal leisure and unsupervised time, organized activities are structured, have goals and expectations that incorporate arcs of effort that extend over days, weeks, and months that lead to culminating events. Organized activities also offer substantial opportunities for collaboration and constructive conversations with peers and adult leaders around shared interests, interactions that are constrained at school and much less common in leisure settings. Because of these differences, organized activities provide fertile opportunities for children's own interests to help guide and support positive developmental outcomes in social, academic, and behavioral domains.

### Linking Activities to Youth Outcomes

A growing body of controlled longitudinal research, employing robust measures, has documented these types of effects of organized activities on children's development. First, participation in *afterschool programs*—activities that meet on a regular basis throughout the school year and provide a variety of hands-on, structured experiences with peers and adults—predicts a wide range of child developmental outcomes, including students' self-perceptions (self-esteem, identity, self-efficacy), bonding to school, positive social behaviors, noncognitive skills (persistence, teamwork, emotional regulation) as well reductions in problem behaviors such as truancy, substance use, and delinquent acts. Participation in afterschool programs also

has been linked to academic outcomes, including math and reading achievement and school grades. Participation in *extracurricular activities*—activities that meet regularly but focus on a single activity, similarly predicts academic grades, school bonding, noncognitive skills like persistence and work habits, self-esteem, psychosocial adjustment, and reductions in antisocial behaviors and truancy. The similarity in findings from these two bodies of research (extracurricular activities and afterschool programs) supports the use of the more inclusive term, *organized activities*, to represent both types of activities.

Although effects associated with participation are statistically significant and replicated in meta-analyses, it should be noted that effects of participation tend to be modest in size. Larger effects are found in research that has taken into account within-group variations in organized activities. Four broad sets of factors—*quality* of youth experiences, *dosage* or amount of time in activities, *breadth* of activities, and activity *type*—have been studied. For the most part, researchers have considered each of these factors separately.

A consistent and robust finding is that the *quality* of youth experiences in organized activities is related to gains in academic and social-emotional functioning and reductions in problem behaviors in both middle childhood and adolescence. Effect sizes are higher for participation in high quality programs. Two types of features of programs appear to stand out.

First, the organization and structure of the programs' activities are important to the quality of youth experiences. A meta-analysis indicates that programs that fit the SAFE criteria (Sequential, Active, Focused on social-emotional development, and Explicit) are associated with positive academic (test scores and grades), social-emotional (prosocial behaviors, self-esteem, self-regulation skills), noncognitive (task persistence, work habits), and behavioral (reductions in aggression and misconduct) outcomes. This combination of features is important because they support opportunities for children and youth conditions to become deeply engaged and to obtain focused information and feedback that helps them learn.

Second, researchers find that interpersonal dimensions of programs are important to quality. Studies show that supportive and positive relationships with adult staff and peers are linked to academic and social gains at school and reductions in misconduct. Further, studies find that more highly educated staff, regular staff professional development, and lower staff to child ratios predict higher staff engagement, which predicts higher youth engagement,

which predicts both academic and social outcomes at school. These findings on the vital importance of interpersonal dimensions of programs to children's learning and development is consistent with decades of research on other contexts, such as families and schools (Eccles & Gootman, 2002), and they also pose a challenge to funders and policy makers. When organized activities fail to provide these features of quality, programs have been found to have either no effects or even negative effects on these youth outcomes.

Effects of organized activities also have been related to *dosage*. Effects of participation are larger when youth participate in activities more frequently and for a longer duration. Effects of participation are substantially larger when youth persist in activities for a longer duration. There is little evidence to support the over-scheduling hypothesis. Most youth are not heavily scheduled in organized activities, and negative effects of activity are not evident until very high hours of participation are reported. The more common pattern is that youth lack opportunities to participate in activities.

Finally youth appear to benefit from engaging in a wide variety of activities. *Breadth* of activities, in the context of extracurricular activities and of afterschool programs, is predictive of greater academic engagement and fewer risky behaviors. These benefits are thought to accrue from youth gaining diverse experiences (i.e., developmental nutrients) and developing relationships with different leaders and groups of peers.

Research examining how these benefits differ across *specific types* of activities is thus far inconclusive. The developmental outcomes associated with participation in specific activities—sports versus arts versus community service—are variable across studies, leading some investigators to argue that type of activity is not as important as the quality of youth experiences in the activity. The value of specific types of activities also may depend more on the match between the activity and youth interest and less on the specific experiences afforded by the activity. This is a topic in which more research is needed.

### Moderators of Organized Activities

Other studies have asked if effects of organized activities are larger for some youth than others. One set of studies has asked if these effects differ for children who are at-risk because of individual, family, or community circumstances. Here, the available research points to organized activities as serving a compensatory function. For example,

youth who are at-risk (because of prior behavior problems, poverty, or unsafe neighborhoods) appear to derive greater benefits from high-quality activities or more program dosage than youth from more advantaged circumstances. In studies that control for youth prior adjustment and a host of family characteristics, researchers ascertained that drug use, school absences, school dropout, and delinquent activities are less in high school among at-risk students who consistently participated in organized activities in middle school. Consistent participation during elementary school is associated with gains in mathematics achievement in low-income children, gains not observed in low-income children who participated less consistently in organized activities.

### Factors That Predict Program Participation

Despite the evidence of benefits of organized activities for children's development, access to organized activities is variable. Large national surveys, augmented by in-depth qualitative and quantitative investigations, find that participation in extracurricular activities varies as a function of family, community, and child characteristics. Children whose parents are more educated and who earn higher incomes are much more likely to participate in organized activities than children whose parents are less educated and/or have lower incomes. In the United States, for example, youth whose mothers have a college degree are 3 times as likely to be involved in extracurricular activities as youth whose mothers did not graduate from high school. Youth participation in low-income families is constrained by fees, but also by the family needs for older youth to provide child care for younger siblings and by family concerns about safety.

Studies of afterschool programs also show differential access to these programs. Federally funded programs like the 21st Century Community Learning Centers and the Supplemental Educational Services tutoring programs are concentrated in schools serving low-income children, whereas fee-based programs are concentrated in schools that have lower proportions of low-income youth. These programs also have different offerings. The federally funded programs tend to focus on academic achievement and have school-like orientations, whereas fee-based programs tend to focus on enrichment and recreation.

If part of the power of organized activities is that they offer opportunities not typically found at school, then young people who attend school-like afterschool programs may be further disadvantaged. An ongoing debate between

some youth-serving organizations and federal and state funders of afterschool programs is whether organized activities that serve educationally at-risk students should be academic and "school-like" in their programming or whether organized activities should have a more youth-centered approach. This is an important topic for future research.

### Directions for Future Research

There are a number of other pressing issues that call for future research. The needs are so great we can only provide a partial list.

#### *Developmental Changes in Organized Activities*

Although the focus of this chapter has been on *development*, the available literature reveals remarkably little about what youth of different ages bring to organized activities or how their experiences in programs change across developmental periods. Work is needed to identify commonalities in programs serving children and adolescents and also what needs to be different to stretch children and teens at different developmental levels. Research suggests that some basic processes, such as a need for trusting and supportive relationships with program staff, are quite similar across age periods. In other respects, programs serving children and adolescents may need to be distinct. Children may benefit from greater structure and somewhat more constrained choices whereas opportunities for greater autonomy may be more important for adolescents. Older adolescents have the potential to utilize more advanced cognitive skills, an "executive suite" that includes capacities for inhibiting impulses, perspective taking, analyzing causal processes, hypothetical reasoning, and understanding the interaction of multiple abstract systems, which has implications for their organized activities. The study of organized activities at this point suffers from "silos" in which some investigators focus on middle childhood and others on adolescence.

#### *Disentangling Key Features and Processes*

Bioecological theory stresses the importance of process in context. A limitation of most of the research conducted to date is that it has focused on one or another aspect of organized activities—quality, breadth, dosage, or activity type. Research is needed that considers multiple dimensions simultaneously in order to determine both unique and synergistic effects associated with particular aspects of organized activities and how these might vary by child,



family, and community characteristics. To understand these processes, it is necessary to have micro-genetic studies and qualitative research that examines the proximal processes as experienced and enacted by youth and leaders in different program settings and different populations of youth as well as quantitative research that includes quality, dosage, and type in the same analyses.

### ***Additional Moderators of Organized Activities***

Researchers need to move beyond the default assumption of a one-size-fits-all model of programming. Differences by social class, ethnicity, and immigration need to be evaluated, with a focus on identifying youth assets, appropriate structures, intervening processes, and program fit for different groups. We in the field need to understand when, for whom, and how culture matters. Similarly, we also need to better understand how programs can facilitate relationships across groups.

### ***Program Thresholds***

Recent research in early childhood (see Burchinal, Magnuson, Powell, & Soliday Hong, Chapter 6, this *Handbook*, this volume) has moved beyond consideration of linear relations between early childcare quality and hours and child developmental outcomes to the identification of thresholds for various childcare parameters. These studies have found, for example, that effects of early childcare quality are not evident until quality meets a minimum standard. Our understanding of organized activities could similarly benefit from studies of threshold effects. Consideration of nonlinear effects of participation, quality, dosage, and breadth of organized activities is needed.

### ***Youth With Special Needs***

There has been little attention paid to organized activities as a developmental context for youth with special needs. Research is needed to identify obstacles to participation and to determine what accommodations and programming are needed. At this point, it is not possible to assess how well special needs youth are served by organized activities because this basic information is not available.

### ***Expanding the Definition of Organized Activities***

Other activities, such as summer camps and classes sponsored by museums and libraries, share many of the features of afterschool programs and extracurricular activities. Understanding of the role of organized activities in youth development will be advanced by integrating these additional settings in definitions of organized activities.

### ***Studies of Program Staff***

Research has consistently shown that the quality of organized activities depends a great deal on the skills and engagement of staff. Across age periods, program leaders organize and monitor activities, provide scaffolding for youth work, serve as mentors, and provide cultural bridging, among many other roles. Much more research is needed to understand the expertise of effective program leaders—how they play these roles in the complex situations of daily practice. For example, how do staff balance youth needs for connection with youth needs for autonomy?

Research is also needed to identify effective strategies for training and development of line staff and directors of organized activities. Programs need staff and site directors who have expertise in youth development and who, in aggregate, have substantive competencies in areas such as music, science, math, or drama. However, a national survey of more than 4,000 afterschool workers found that most staff lack formal education in the content areas they lead and receive only minimal training (National Afterschool Association, 2006). There is a compelling need for researchers to work with policy makers and intermediary organizations to develop and evaluate training programs that better prepare line staff and program directors to lead organized activities.

### ***Moving Beyond Child Outcomes***

The focus of this chapter has been on organized activities in relation to children's development. Additional research is needed to examine effects of organized activities on a broader array of constituencies, including families, schools, and communities. Families are likely influenced in multiple ways by their children's participation in organized activities. Promising areas to study include effects of organized activities on family roles and responsibilities. Research also is needed to examine effects of afterschool programs and extracurricular activities on schools. These effects could be studied as changes in school-level performance on standardized tests, daily attendance, delinquent activities, and/or neighborhood crime statistics. Effects of organized activities on process variables within the school can also be studied. What does it mean, for example, when program staff works with teachers at a school to introduce afterschool learning principles to their classrooms?

### ***Final Thoughts***

This chapter represents the first time that the *Handbook of Child Psychology and Developmental Science* has devoted

a full chapter to the topic of organized activities. Our goal has been to highlight the value of organized activities for developmental scientists who are interested in studying processes of positive development. Knowledge gained from the careful study of organized activities can be used, we believe, to improve the life opportunities of young people. This knowledge may also be used to inform efforts to improve schools as developmental settings that support children's development. Our hope is that this chapter will encourage others to join us in this work.

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## CHAPTER 9

# Children at Work

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## INTRODUCTION

The image of a *child at work* encompasses a broad range of activities in diverse contexts. It could be an image of a child *working* on a school assignment, *working* to finish a model volcano for the science fair, *working* on household chores to earn an allowance, *working* to care for younger siblings, or *working* alongside a parent on a farm, in a small

family-owned business, or in an office during an annual take-your-child-to-work day. It could also invoke unsettling images of children *working* in hazardous jobs (e.g., mining, street trade), performing dangerous tasks (e.g., rag picking, operating heavy farm machinery), or in exploitative activities (e.g., prostitution, armed conflict, prize-fighting, illicit-drug trading). Of course, when we think of *children at work*, we must also consider the many employed teenagers who serve us our favorite fast-food sandwiches, who trim our lawns, who babysit our children, and who help us find the perfect pair of sunglasses at the sporting-goods store.

Because *children at work* is too broad a topic for one chapter, here we focus on children's experiences in paid work in the United States and in other countries around the world. Our objective is first to highlight the diversity in early work experiences and then review studies that

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advance understanding of the short- and longer-term developmental and health consequences of child and adolescent experiences in paid work.

Our conceptual framework for this chapter draws from key principles of a life course perspective (Elder, Johnson, & Crosnoe, 2003; Mortimer & Shanahan, 2003). In this perspective, life course transitions, such as movement in and out of work, carry different meanings and result in distinct social and developmental outcomes depending on when they occur in life (i.e., the life course principle of timing). For instance, as we review in this chapter, children are likely to exhibit psychological distress and problem behaviors when they experience a high degree of autonomy, status, and earnings at work. For adults, these dimensions of work are coveted. A life course perspective also stresses how an individual's experiences and trajectories through work, school, and family are inherently interwoven with the life course trajectories of significant others (i.e., principle of linked lives). Children's experiences in paid work are affected by their parent's labor market experiences and attainments, as well as the expectations they have for their children. In a life course perspective, it is also assumed that youth are planful and make choices within the social and environmental constraints of opportunities (i.e., principle of bounded agency). Social forces such as poverty and poor labor markets can greatly limit opportunities for even the most agentic youth to establish themselves in the world of work.

Here we seek to understand how family background, prior experiences and orientations, interpersonal relationships, and macrolevel changes (e.g., economic shocks such as Great Recession, shifts in labor market structure) influence the timing of entry into work and the quality of initial jobs; how these early work experiences are linked to school achievement, other work activities (housework, schoolwork, volunteer work), social development, and problem behaviors; and the potential long-term consequences of early involvements in paid work with respect to health and well-being, as well as engagement and success in work, school, and family as young people make the transition into adulthood.

The chapter is divided into three parts: The first part considers youth employment in the United States, and much of this section draws from previous reviews and research on this topic (e.g., Mortimer, 2010; Mortimer & Staff, 2008; Staff, Messersmith, & Schulenberg, 2009). We examine when youth in the United States enter the labor force, with particular attention to the hours, type, and quality of these experiences, and how entry into work

varies by gender, race/ethnicity, and family background. Next, we highlight employment during the high school years. We consider the types, hours, and qualities of jobs that young people hold, and more generally, the functional form of these early "careers." We also examine how these work experiences are associated with prior orientations and behaviors as well as family socioeconomic background.

We then consider research on the correlates and consequences of youth work, highlighting four major perspectives on this topic. One view is that employment is developmentally, socially, and academically harmful, and it should be avoided. A second view is that the developmental consequences of employment depend on the quality of the job and the intensity of the involvement. A third view questions whether paid work has good or bad effects on development and instead suggests that these relations are spurious. The final view posits that the effects of teenage employment (both good and bad) depend on the worker.

To highlight some recent trends in youth employment in the United States, as well as descriptive associations of paid work with youth achievement and adjustment, throughout this section we present figures based on cross-sectional data from multiple nationally representative cohorts of the Monitoring the Future (MTF) project. The MTF project is an ongoing cohort sequential and prospective study of middle and high school students in the United States (Johnston, O'Malley, Bachman, & Schulenberg, 2013). Beginning in 1976, large, nationally representative samples of 8th, 10th, and 12th graders (approximate ages range from 13–14 to 17–18) were selected each year from both public and private high schools. Self-completed questionnaires were administered in classroom settings. Approximately 90% of students responded to these baseline surveys, with nearly all nonresponse due to absenteeism. For the interested reader, data from the public release version of these grade cohorts are available to download at the Inter-university Consortium for Political and Social Research (<http://www.icpsr.umich.edu/icpsrweb/ICPSR/series/35>). Details of the Monitoring the Future study are also available (<http://monitoringthefuture.org/>). In this chapter, cross-sectional data are used from 20 8th- and 10th-grade cohorts (from 1992 to 2010) and more than 30 12th-grade cohorts (from 1977 to 2010).

In the second section, we review the literature on child and adolescent employment in an international context, discussing some major themes in this diverse literature. Most

of our review focuses on children's employment in "developing" economies.<sup>1</sup> Our goal here is not to provide an exhaustive review of this literature. Instead, we aim to highlight some of the unique situations that young workers in developing countries face as they leave school and enter the labor market. Similar to the previous section, we examine recent trends in youth work, some of the reasons why children work, and the basic characteristics of the work that children and adolescents do in developing countries. We then apply the four perspectives to international studies of youth work, highlighting exploitative and beneficial forms of child labor, noting how child labor can serve as socialization for adult labor and the importance of children's work in the family economy.

In the final section, we discuss potential areas of new research on youth employment. These research areas include: the impact of the global recession, or of economic shocks more generally, on child and youth work in both the United States and worldwide; further examination of how different types and qualities of work relate to children and adolescent outcomes; and more studies that consider diverse trajectories of school and work involvement during the early occupational career.

## CHILDREN AT WORK IN THE UNITED STATES

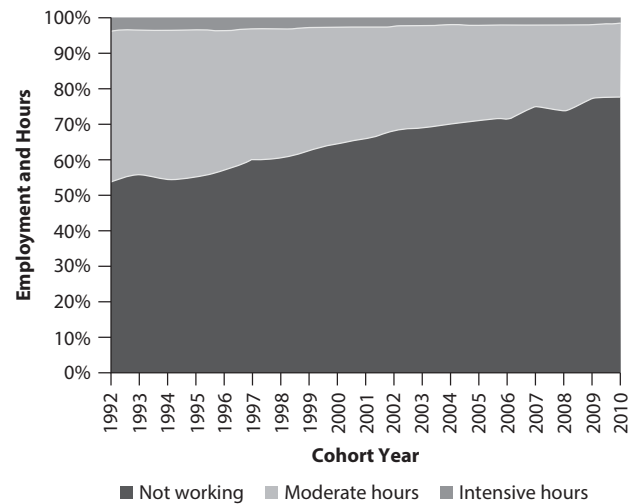
We begin this section with an overview of the scope of youth work in the United States, highlighting the onset, intensity, job type, and demographic correlates of these early experiences in the labor market.

### Entering the Labor Force

Cross-sectional and longitudinal studies of young people in the United States have consistently shown that most children and adolescents work for pay. For instance, an estimated 80% to 90% of youth will spend time in a paid job before leaving secondary school (Hirschman & Voloshin, 2007; U.S. Department of Labor, 2000), although it is important to note there has been a steep decline in teenage employment rates in the years during and following the Great Recession (i.e., since 2008). Studies have also well

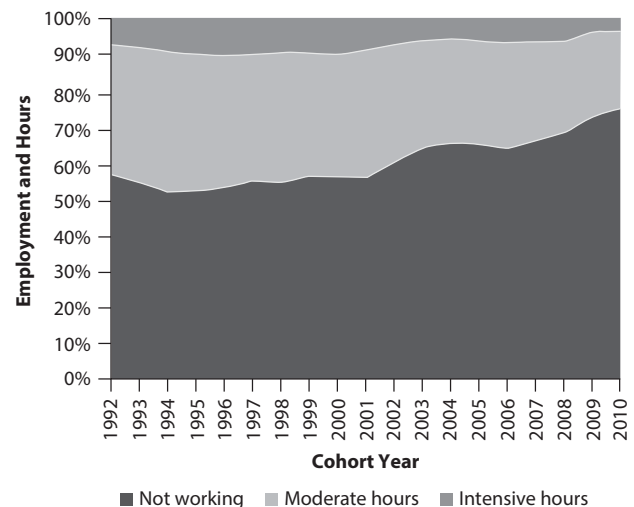
documented that high school students are more likely to be employed than middle school students. In addition, the average hours of employment per week, or the "intensity" of work, increases as youth progress through secondary school (U.S. Department of Labor, 2000).

In recent years, however, youth employment has become less prevalent. For instance, in Figures 9.1a and 9.1b, we use data from the MTF to illustrate cohort changes in the percentages of 8th and 10th graders who worked during the school years, as well as the percentages of youth who



**Figure 9.1a** Percentage of 8th graders employed (and average hours worked among working youth) during the school year by cohort year.

Source: Monitoring the Future.



**Figure 9.1b** Percentage of 10th graders employed (and average hours worked among working youth) during the school year by cohort year.

Source: Monitoring the Future.

<sup>1</sup>According to the United Nations, countries with developing economies have low levels of income and human capital (see [http://www.un.org/en/development/desa/policy/cdp/ldc/ldc\\_criteria.shtml](http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_criteria.shtml)). Many of the countries with developing economies are located in Latin America, Africa, Asia, and Eastern Europe.

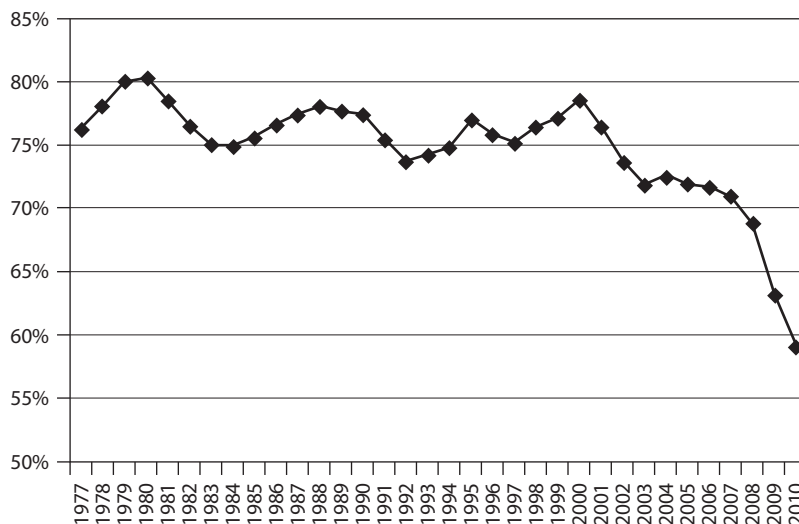
worked moderately (i.e., an average of 1 to 20 hours per week during the school year) or intensively (i.e., averaging more than 20 hours of paid work per week). These figures show unweighted percentages based on pooled nationally representative and cross-sectional datasets of 8th- and 10th-grade students from annual MTF surveys. During 8th and 10th grades, the majority of students do not work in paid jobs during the school year (64% of 8th graders and 60% of 10th graders). As shown in Figures 9.1a and 9.1b, the percentage of nonworking youth has risen steadily over the years. In 1992, for instance, 54% of 8th graders did not work during the school year, whereas in 2010, 78% were not working. For 10th graders, 57% were not employed in 1992 compared to 75% in 2010. When 8th and 10th graders do work, the majority limits their hours to fewer than 21 hours per week. Only 1.5% of 8th graders and just over 3% of 10th graders average more than 20 hours per week during the school year.

As previously mentioned, employment is much more common by the end of high school. In 2010, for example, 59% of 12th graders in the MTF reported working during the school year. Similar to the 8th and 10th graders, the percentage of employed youth has declined in recent years. Figure 9.2 shows the percentages of employed 12th graders in the United States from 1977 to 2010. Employment rates show slight fluctuations with a moderate decline from 2000 to 2007, followed by a much more pronounced drop from 2008 to 2010. Other analyses (not shown) reveal that the loss of work was heavily concentrated among 12th grade “intensive” workers. In 2000, when teenage employment

rates were at a recent high, 79% of 12th graders were employed, with 34% of workers averaging over 20 hours per week and 45% working moderately. By 2010, the percentage of moderate workers was similar to a decade earlier, with 41% of youth working moderately. However, only 18% worked intensively, and 41% were not employed. It is clear that the recent economic downturn has reduced opportunities for teenage workers, who are often the last hired and the first fired. This decline in employment is especially true among youth who would have spent long hours on the job in prior decades.

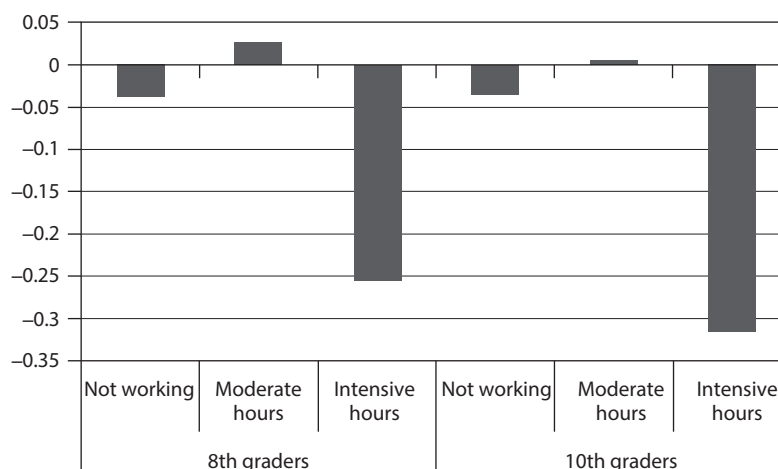
### Demographic Precursors of Child and Adolescent Employment

Sociodemographic background factors, such as gender, race/ethnicity, parent(s) education, and household income influence the timing of entry into paid work and the intensity (or average hours per week) of these early experiences (Hirschman & Voloshin, 2007; Mortimer, 2003; Mortimer, Staff, & Oesterle, 2003; National Research Council, 1998; Pabilonia, 2001). For example, in 2010, 27% of 8th-grade boys in the MTF had worked compared to only 17% of girls. Almost all of this work was limited in hours (i.e., less than 1% of girls at this age worked intensively; 2% of boys). Gender differences in the rates of employment are less stark by the 10th grade (i.e., 27% of boys were employed in 2010; 23% of girls), although boys are still more likely to work intensively when they are employed. By the 12th grade, we see gender convergence: 58% of



**Figure 9.2** Percentage of employed 12th graders during the school year by cohort year.

Source: Monitoring the Future.



**Figure 9.3** Parent(s) education (z scored) by work status and hours, separately for 8th and 10th graders (combined 1992 to 2010 MTF cohorts).

Source: Monitoring the Future.

boys and 59% of girls are employed; 18% of boys and 17% of girls work intensively (Bachman, Johnston, & O'Malley, 2011).

Research also has documented that European American youth are much more likely than African American youth to work during the school year. In 2010, 53% of African American 12th graders in the MTF reported not working, compared to 35% of European American youth (Bachman, Johnston, et al., 2011). Latin American teenagers have a similar low employment rate compared to European Americans. When employed, however, African American and Latin American teenagers spend more time on the job (on average, African American and Latino/a American youth spend between 3 and 5 additional hours per week of work during the school year compared to European American youth; U.S. Department of Labor, 2000; see also the National Research Council, 1998).

Family socioeconomic background (i.e., parent(s) education, job status, income, and occupational prestige) influences both the age of labor market entry and the average hours of employment. In general, youth in lower income households enter the labor market at older ages than youth who reside in families with higher incomes (Sum, Khatiwada, Trubsky, & Ross, 2014; U.S. Department of Labor, 2000). However, research consistently shows that youth from disadvantaged backgrounds, as assessed by both household income and parent(s) education, average more hours when they are employed than their more advantaged schoolmates (Entwisle, Alexander, & Olson, 2000; Hirschman & Voloshin, 2007; Mortimer, 2003; Mortimer et al., 2003; Staff & Mortimer, 2008).

Figure 9.3 illustrates this pattern of selectivity into paid work with descriptive statistics from the MTF 8th- and 10th-grade cohorts. In this study, 8th- and 10th-grade youth reported the educational degree of their mother and father, which we averaged and then transformed into a z-score to ease interpretation. Figure 9.3 shows levels of parent(s) education for nonworking, moderately working (i.e., 1 to 20 hours of work per week during the school year), and intensively working (more than 20 hours per week) youth, separately for 8th and 10th graders. In both grades, nonworking youth have parents with slightly lower than average levels of education (by less than .05 of a standard deviation). However, it is clear in Figure 9.3 that intensively working youth are disproportionately drawn from families in which parents have limited education.

### Where Do Children and Adolescents in the United States Work?

Children and adolescents in the United States are most likely to be employed in the retail sector of the economy, and compared to earlier cohorts of youth, they are less likely to be employed in agriculture and mining, construction, and manufacturing industries (U.S. Department of Labor, 2000). Hirschman and Voloshin (2007), using data from the 2005 Current Population Survey, showed that over three-quarters of working youth the ages of 16 to 19 were employed in food service (primarily food preparation and serving), sales, and office administration.

The MTF study also contains detailed information on the types of jobs youth work in during the school year. The



majority of eighth-grade workers are employed informally during the school year, mostly working as babysitters (41%) or yard workers (21%; Staff et al., 2009). The percentage of working eighth graders employed in lawn work has climbed in recent years (from approximately 16% in 1991 to 26% in 2010), whereas work in newspaper delivery has almost disappeared. In 2010, less than 1% of working youth delivered newspapers. Perhaps the vanishing opportunities for delivering newspapers accounts for the recent increase in the percentage of youth working in lawn care.

By 10th grade, increasing numbers of working youth are employed in restaurants (16%), although 41% of youth still work in informal jobs. Store clerk and fast-food worker are the most common jobs held by 10th graders (7% each of workers). However, the percentage of 10th graders employed in fast-food jobs has tumbled in recent years. In 1991, for instance, over 10% of working youth were employed in fast food; in 2010, only 3% worked in these jobs. The percentage of 10th graders employed as store clerks showed a similar decline (from 10% in 1991 to 4% in 2010). Again, lawn work has increased from 9% in 1991 to 18% in 2010. By 12th grade, less than 10% of youth work in informal jobs. Instead, one-quarter of youth are employed as clerks, and 28% work in restaurants. Approximately 20% of youth in the MTF reported working in “other” jobs.

Sociodemographic background factors also influence the types of jobs young people have. In 8th grade, for example, girls are more likely than boys to work in babysitting (72%), whereas boys are most likely to work in lawn care (37%). Youth whose parents have high levels of education are most likely to work in office jobs, whereas those from more disadvantaged backgrounds are more likely to work in restaurants and especially in fast food. African Americans are also more likely than European Americans to work in fast-food jobs (see Staff, Schulenberg, Bachman, Parks, & VanEseltine, 2013).

In summary, youth in the United States begin working in informal jobs (babysitting for girls; yard work for boys) during the middle school years, and then transition into a broad range of jobs, indicating a high level of diversity in early work experiences (see also U.S. Department of Labor, 2000).

## PERSPECTIVES ON YOUTH WORK

Now that we have presented data that indicates how much and where U.S. teenagers work, we turn to consider

whether teenage employment is good or bad for youth development. There are four general perspectives on this issue that we discuss in this section.

### Perspective 1. Children and Adolescents Should Not Work

Think back to the jobs you held as a child (assuming that you worked, which as we mentioned earlier was the case for at least 8 out of 10 youth in the United States.). Did you learn anything on the job? What did you do with your earnings? Did you work with adults? In the groundbreaking *When Teenagers Work: The Psychological and Social Costs of Adolescent Employment*, Greenberger and Steinberg (1986) challenged the popular conception that teenage work was developmentally beneficial and instead argued that the context and quality of most teenage work experiences have changed for the worse. Whereas teenagers once labored alongside family members and other adults in factories, farms, and mills, developing vocational skills that could be used throughout their careers, teenagers nowadays typically work in the worst types of jobs that offer no experiences for learning or mentorship from adults. Following Greenberger and Steinberg’s argument about the detrimental character of adolescent work, and its adverse contexts, they would likely make a number of predictions. They would expect that you worked in a job that did not provide any useful skills or preparation for future work (the “educational context”). They would argue that these jobs were costly to your formal education because the more time you spent working the less time you had to devote to your schooling. They also would argue that you probably used your earnings for discretionary purchases (buying clothes, music, or fast food) rather than saving the money for college or for helping out with family expenses (the “economic context”). They would cast doubts that you worked alongside adults; instead you would be toiling in an age-segregated workplace with coworkers and supervisors who were also teenagers (the “social context”). It was likely that you faced task overloads, time pressures, and role uncertainties that exceeded your coping strategies, and this stressed you out. In addition, the more time you spent at work, the less time you probably had to participate in more developmentally beneficial activities, such as playing sports, volunteering, helping out with household chores, and spending time with family and friends in more structured activities. Instead, you probably spent more time with older coworkers and friends in unstructured settings that increased the chances of engaging in inappropriate

and possibly harmful adult-like behaviors (i.e., drinking, smoking, and sexual activity).

Are early work experiences in the United States really that bad? Does work undermine school pursuits and contribute to problem behaviors? Does it pose long-term “opportunity costs”? Do most teenagers only spend their earnings on themselves? Let us now examine the empirical evidence. Below, we consider each context in more detail.

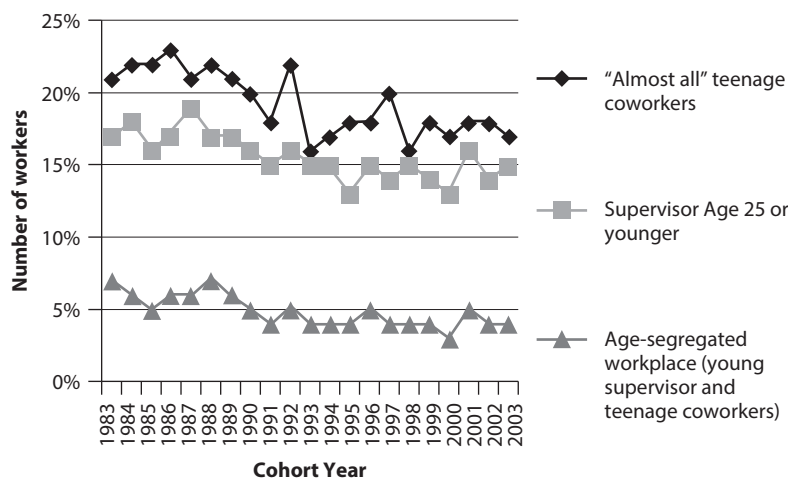
### *The Educational Context*

In an influential report issued by James Coleman and other leading social scientists in the 1970s, teenagers were encouraged to obtain jobs (Coleman et al., 1974). The report noted that adults in the workplace could provide vocational guidance for young people by teaching them valuable job-related skills, by facilitating connections to other adult supervisors and coworkers, or by providing references for future employment opportunities. Adult coworkers and supervisors may also provide educational guidance by informing young workers about the educational credentials they will need for future professions, as well as helping them to apply at work what they have learned in school. Adults in the workplace could also teach young workers “soft-skills” that are valued by employers, such as how to be hardworking, responsible, and independent; how to conduct oneself in an interview; how to interact with customers, coworkers, and supervisors; and how to participate in cooperative activities. Perhaps most importantly, it was believed that working could effectively counter the common experience of age segregation among youth, helping smooth their transition from

school into work and more generally from adolescence to adulthood.

Greenberger and Steinberg (1986) did not disagree with the potential benefits of youth working with adults. Their claim, however, was that contemporary teenagers in the United States do not work alongside adults, but instead face an abundance of same-age coworkers (Steinberg & Cauffman, 1995). In such settings, adolescents who work primarily alongside teenage supervisors and coworkers will have few opportunities to learn vocational skills and positive work ethics from adult mentors. Youth employed in age-segregated jobs may also develop cynical attitudes toward work and a tolerance for poor work performance and workplace deviance (Greenberger & Steinberg, 1986). Much depends on the social context in which youth work. Research shows that adolescents who are employed alongside delinquent coworkers are more likely to be delinquent, both while they are at work and after they leave, compared to employed youth who do not labor alongside delinquent peers (Ploeger, 1997; Wright & Cullen, 2000).

Do teenagers mostly work with other teenagers? To help answer this question, for many years, the MTF study has collected information on the work experiences of successive nationally representative 12th-grade senior cohorts. In each cohort, youth were asked to report not only their work hours and the type of work they performed, but also the quality of these early work experiences. Figure 9.4 displays the percentage of employed 12th graders in the MTF study who reported working with mostly teenage coworkers, whose supervisor was Age 25 or younger, and who experienced a high degree of age-segregation (i.e., they reported



**Figure 9.4** Percentage of employed 12th graders who work with mostly teenage coworkers, whose supervisor is Age 25 or younger, and who experience an age-segregated workplace, by cohort year (combined 1983 to 2003 cohorts).

Source: Monitoring the Future.

that “nearly all” or “all” of their coworkers were teenagers *and* their supervisor was Age 25 or younger). These questions about the ages of supervisors and coworkers were asked to 20 senior year cohorts from 1983 to 2003, enabling us to examine trends over time.

As shown in Figure 9.4, only about 20% of employed seniors reported that “nearly all” or “all” coworkers were within 2 or 3 years of their own age. In addition, less than 20% of seniors worked with a supervisor who was 25 years or younger. Surprisingly, only 5% of 12th graders had a truly age-segregated workplace, with a supervisor under the age of 26 and almost all young coworkers. It is noteworthy that these trends are remarkably consistent over time (from 1983 to 2003). These basic descriptive statistics challenge the notion that most teenagers face a high degree of age-segregation in the workplace.

The MTF also contains information on the skill development and career potential of these early work experiences (Johnston, Bachman, & O'Malley, 2005). Seniors in high school were asked “to what extent did this job use your skills and abilities—let you do the things you do best” and “teach you new skills that will be useful in your future work.” Responses to these items ranged from 1 (“not at all”) to 5 (“a great extent”). Respondents also were asked to indicate the level of career potential in their senior-year jobs, such as the extent to which the job was “a job you could be happy doing for the rest of your life”; “the type of work you expect to be doing for most of your life”; or “a good stepping-stone toward the kind of work you want in the long run.” In 2003, the last year that information on work quality was collected in the MTF, 31% of working seniors noted that their job to a “considerable” or “great” extent taught them new skills that would be useful in future work, and 28% similarly expressed that the job made use of their skills and abilities, letting them do the things that they do best. In fact, more than 80% of working youth in 2003 felt that their job offered at least “a little” of these advantages. However, when asked if this was a job they could be happy doing for the rest of their lives, or the type of work they expected to be doing for the rest of their lives, 62% and 73%, respectively, said “not at all.” Furthermore, just over half of working seniors also replied that their current job was “not at all” a stepping-stone toward future career work.

These descriptive statistics challenge the notion that the educational context of work is indeed lacking for many young workers in the United States. However, paid work may still negatively impact educational outcomes if these early work experiences limit time that could be spent

participating in school activities, completing homework, meeting with teachers and tutors, or studying for exams. The compatibility of work with school has long been a salient issue for employed teenagers. Scholars have been especially worried that paid work interferes with academic pursuits (Marsh & Kleitman, 2005; Steinberg & Cauffman, 1995). Research shows that when employed teenagers feel that their work is interfering with school, they show higher levels of depressed mood, a reduced sense of well-being, and higher rates of school misconduct, alcohol use, and arrest (Mortimer, Harley, & Staff, 2002; Staff & Uggen, 2003). But when employed high school seniors in the MTF were asked if their jobs were interfering with their education, just under half replied “not at all” (Johnston et al., 2005).<sup>2</sup> The meaning of these responses is somewhat ambiguous, as youth who have little interest in school may report little interference, whereas youth who are highly motivated to be good students may be more sensitive to fluctuating work demands and report high work/school incompatibility.

To assess this key issue of work/school incompatibility, most research has compared students with different work conditions with cross-sectional data or has examined work-school associations longitudinally, controlling for lagged school outcome variables. In these studies, working and nonworking children show similar levels of school engagement and performance, which challenges the notion that working in adolescence is universally bad for early scholastic achievements (Mortimer & Finch, 1986; Steinberg, Greenberger, Garduque, Ruggiero, & Vaux, 1982; Warren, LePore, & Mare, 2000). However, when youth work intensively during the school year (i.e., average more than 20 hours per week), compared to when they work moderately or not at all, they show lower levels of school effort, engagement, attendance, and completed homework assignments (Carr, Wright, & Brody, 1996; D'Amico, 1984; Greenberger & Steinberg, 1986; Lee & Staff, 2007; Marsh & Kleitman, 2005; McNeal, 1997; Monahan, Lee, & Steinberg, 2011; Mortimer & Finch, 1986; Schoenhals, Tienda, & Schneider, 1998; Staff, Schulenberg, & Bachman, 2010; Steinberg et al., 1982; Warren & Lee, 2003). Intensively employed teenagers also report lower grade-point averages and achievement scores, as well as lower odds of high school graduation, than nonworking and moderately working youth.

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<sup>2</sup>The percentage of youth reporting no work/school conflict has been remarkably consistent in the MTF over the years.

Intensive involvement in paid labor during high school is also associated with subsequent educational investment. For instance, heavy involvement in paid work during adolescence (more than 20 hours per week throughout high school) is linked to a lower likelihood of obtaining a 4-year college degree, compared to youth who limited their hours of work and worked steadily during high school (Bachman, Staff, O'Malley, Schulenberg, & Freedman-Doan, 2011; Carr et al., 1996; Mortimer, 2003; Staff & Mortimer, 2007). Moreover, adolescents who pursue intensive work hours obtain fewer months of higher education than do their nonworking or moderately working peers (Mortimer et al., 2003). Although some youth employment experiences are valuable for education (Leventhal, Graber, & Brooks-Gunn, 2001; Mortimer, 2003), research consistently demonstrates that heavy investment in work while still in school has short- and longer-term educational costs (Bachman, Staff, et al., 2011; Lee & Staff, 2007; Staff & Mortimer, 2007; Warren & Lee, 2003).

In sum, prior research supports the contention that education can be compromised if youth spend long hours on the job (which, as we have seen, has become less likely over time). The majority of youth also do not view their early work experiences as career-like. However, many youth perceive their jobs as valuable learning opportunities, and there is little evidence to suggest that working limited hours is detrimental to school success (in fact, evidence suggests it can be beneficial).

### *The Economic Context*

A long-standing critique of youth work is that for most children in the United States getting a job is economically unnecessary. As noted earlier, the majority of employed youth are from more advantaged family backgrounds (i.e., they reside in families with higher levels of household income and education). Among these youth, earnings from paid jobs are likely to be used for personal purchases or leisure spending. They are unlikely to be used for school expenses or saved for college. They are unlikely to be given to parent(s) for household expenses. If paid work poses unacceptable risks to education and social development (as some scholars have claimed), and the earnings are typically only used for leisure spending, then perhaps teenagers should delay their entry into the labor force until they are older.

Are teenagers in the United States really motivated to work only so they can buy things? In the Youth Development Study (YDS), a multigenerational longitudinal study of teenagers who initially resided in St. Paul, Minnesota

in 1988, over three-quarters of working youth from the 9th to the 12th grade (i.e., from 1988 to 1991) sought work "to buy things." However, in higher grades they were increasingly likely to seek employment in order to save for education and other purposes (Mortimer, 2003). An examination of how these youth spent their earnings shows that only small percentages of youth gave any of their earnings to their parents for the family's expenses, although much higher proportions used their earnings for school expenses and to save for future education (i.e., just under half of employed high school seniors). In 2010, over half of high school seniors in the MTF reported that they saved at least some of their earnings for future educational expenses, just under half (44%) contributed some of their earnings to pay family living expenses (groceries, housing), and only 19% spent "almost all" or "all" of their earnings on their own needs and activities, such as clothes, music, eating out, or other recreation.

It is clear that many students use their earnings for leisure spending. However, the fact that many employed students, especially in the later years of high school, used at least some of their pay for "nonleisure" spending (Shanahan, Elder, Burchinal, & Conger, 1996) challenges the notion that employed teenagers do not use their earnings in useful ways (i.e., helping their families make ends meet or saving for their future education). It might be assumed that high leisure spending among working teenagers is inherently bad, but little research has considered how youth's expenditures of their earnings from work relates to school success, problem behaviors, and parent-adolescent relationships. Shanahan et al. (1996), in a study of rural youth in Iowa, found that parent-adolescent relationships improved when youth used their earnings for clothes, shoes, school fees, or gave their money to parents. In fact, parents of teenagers are overwhelmingly positive about their children's employment and encourage them to work (Mortimer, 2003). Some believe that their children's paying jobs teach them the value of money and would prefer that they spend their own earnings for nonessential "leisure" activities, such as a prom dress or a concert, rather than relying on their parents for such expenses. Nonetheless, high discretionary spending among working teenagers may still have negative developmental and social consequences, especially if they are spending their money on cigarettes, alcohol, and illicit drugs, or if they develop a sense of "premature affluence" that is unsustainable when they leave the parental home (Bachman, 1983). We discuss these potentially negative effects of work on social development next.



### *The Social Context*

Paid work could harm social development in several ways. First, paid work could limit time that can be spent in organized, extracurricular activities, such as participation in sports, theatre, arts, and various other academic clubs and organizations. Extracurricular activities are generally viewed as developmentally and socially beneficial as they provide opportunities for youth to explore their potential interests and values in structured settings that are typically organized and supervised by adults (Csikszentmihalyi & Schneider, 2000). In fact, extracurricular involvement in sports and clubs during adolescence is associated with positive adjustment in high school, and these developmental benefits can reach into early adulthood (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999). However, some studies have found a positive association between sports participation and substance use during adolescence (e.g., Crosnoe, 2002; Hoffmann, 2006; Peck, Vida, & Eccles, 2008).

The zero-sum argument against teenage labor is that working youth will have less time available to engage in school-related activities, especially if they spend a lot of time at work. Working youth also may limit their extracurricular participation in academic clubs and athletics because their work schedules change from week to week and they are unable to commit to these scheduled school activities. Consistent with this argument, Osgood (1999) found that working youth were less likely to participate in extracurricular sports as work hours increased during the school year. Instead, employed teenagers may be more likely to hang out with friends in unstructured settings and without adult supervision (Safron, Bachman, & Schulenberg, 2001). According to routine activities theory, hanging out with friends and no "capable guardians" (i.e., parents, teachers, other adults) in an unstructured setting heightens the likelihood of delinquency, substance use, and precocious sexual activity. As mentioned previously, employment, especially among those working intensively, also provides teenagers with financial resources to spend on leisure activities, which can enable more unstructured and unsupervised socializing (Osgood, 1999). In fact, youth who spend long hours on the job are more likely to go to parties and bars, go on dates, and ride around in cars for fun, all of which are activities that increase the likelihood of delinquency and substance use (Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996). Youth who work more than 20 hours per week are also more likely than nonworking and moderately working

youth to engage in delinquency and substance use (Apel, Paternoster, Bushway, & Brame, 2006; Greenberger & Steinberg, 1986; McMorris & Uggen, 2000; Mortimer & Johnson, 1998a; Staff, Osgood, Schulenberg, Bachman, & Messersmith, 2010; Steinberg & Dornbusch, 1991; Steinberg, Fegley, & Dornbusch, 1993).

In addition to heightening unstructured and unsupervised forms of leisure, youth employment may weaken the influence of significant others (i.e., teachers, parents and family members, coaches) in restraining problem behaviors. According to social control theory (Hirschi, 1969; Kornhauser, 1978), youth are less likely to be delinquent when they are strongly "bonded" to social institutions such as the family and school. For instance, social bonds that facilitate socialization and restrain deviant behavior include involvement in school and family activities, attachment to parents and teachers, and commitment to school and to long-term educational achievement. For some youth, employment may weaken these bonds to teachers and parents, especially if work is providing income for discretionary spending, autonomy from parent supervision (e.g., employment requiring late hours away from home), and a source of status outside the school setting (e.g., gaining status from peers due to discretionary spending; Staff & Uggen, 2003). Delinquent acts and other problem behaviors are more likely when youth reject the authority of parents and schools. The experience of working may also reinforce a sense of precocious adult independence, weakening ties to parents, and leading to greater freedom from parental control (Greenberger & Steinberg, 1986; Longest & Shanahan, 2007).

Indeed, scholars have long expressed concern that involvement in paid work may hurry adolescence and engender a precocious maturity of more adult-like role statuses and problem behaviors, including disengagement from school and parents; alcohol, cigarette, and illicit drug use; dating and sexual activity; inadequate sleep and exercise; and work-related distress (Bachman & Schulenberg, 1993; Greenberger & Steinberg, 1986; Newcomb & Bentler, 1988; Safron et al., 2001). Although negative associations between high-intensity work and adolescent adjustment have been well documented (as described), employed adolescents may take on precocious family roles and behaviors as well, such as initiation of sexual activity, pregnancy, union formation, and residence away from the parental home, before they are developmentally ready for these more adult-like roles and responsibilities (Greenberger & Steinberg, 1986). Bozick (2006) found that adolescents who worked intensively experienced

their first sexual intercourse earlier than their nonworking and moderately employed peers. Using nationally representative data from the National Longitudinal Study of Adolescent Health, Staff, VanEseltine, Woolnough, Silver, and Burrington (2012) found that teenagers who spend long hours on the job during the school year are likely to experience precocious family behaviors in adolescence, such as sexual intercourse, pregnancy, childbearing, residential independence, and union formation, earlier than youth who work moderately or not at all.

More generally, paid work may expose children and teenagers to more adult-like situations that they are inadequately equipped to handle. For instance, experiencing work stressors during adolescence is positively related to depressed mood and negatively related to self-esteem and self-efficacy, even after controlling prior mental health and other risk factors (Finch, Shanahan, Mortimer, & Ryu, 1991; Mortimer et al. 2002; Mortimer & Staff, 2004; Shanahan, Finch, Mortimer, & Ryu, 1991). Excessive demands and stressors at work are also associated with increased cigarette, alcohol, and substance use (Bachman & Schulenberg, 1993), as teenagers may be using these substances to cope with work-related distress. Youth may be especially sensitive to excessive work demands and high stressors if they have a strong orientation to school. As mentioned earlier, competing work and school demands have been shown to heighten depressed mood and reduce well-being (Mortimer et al., 2002). Furthermore, youth have higher rates of school-related misconduct, alcohol use, and contact with the police when they believe that their jobs are interfering with their academic pursuits (Staff & Uggen, 2003). Employed teenagers also face a relatively high risk of sexual harassment (Houle, Staff, Mortimer, Uggen, & Blackstone, 2011), partly because they have little power in the workplace and are perceived as easier targets (Blackstone, Uggen, & McLaughlin, 2009). Based on this research, high work demands, stressors, school incompatibility, and sexual harassment could have numerous undesirable effects on positive youth development.

In summary, although it is unclear whether all early work experiences are bad or whether certain jobs are better than others, there is considerable evidence that involvement in paid work during adolescence is associated with poor school performance, limited involvement in extracurricular activities, use of alcohol and illegal substances, minor delinquency, and precocious family formation behaviors as well as reduced educational attainment in young adulthood. Yet, these deleterious effects of paid work are mostly limited to youth who work intensively, and intensive work

has diminished markedly during the past decade. In the next section, we highlight studies that show short- and longer-term benefits of *moderate* work involvement during the high school years.

## **Perspective 2. Working During Adolescence Isn't All That Bad, and a Little Bit of Work Can Actually Be Good**

Whereas some studies suggest that contemporary teenagers are unlikely to find high-quality work experiences that are developmentally beneficial, recent research suggests otherwise, showing considerable variability in quality-relevant job characteristics. For instance, Hirschman and Voloshin (2007) found that youth working as lifeguards, athletic coaches, tutors, office clerks, or receptionists were in “good” jobs because they earned higher wages and worked fewer hours per week than youth who worked in retail, food service, or blue-collar jobs. Research by Mortimer and colleagues (Call & Mortimer, 2001; Mortimer, 2003; Mortimer et al., 2002; Mortimer & Staff, 2004; Staff et al., 2013) showed that the employment conditions of teenagers vary across other important dimensions as well, such as the amount of adult supervision and support; degree of learning opportunities and skill utilization; long-term career potential; stress; and compatibility with activities in other domains, including school, family, and friends. These studies suggest that not all teenagers work in bad jobs, and that some work experiences may be more beneficial than others.

First, as we showed in Figure 9.4, many youth work with adult coworkers and supervisors, and these jobs can offset age segregation among youth. In fact, social scientists have argued that teenagers should seek employment to develop “closer personal relations between adults and youth” (Coleman et al., 1974, p. 160; National Research Council, 1998). As mentioned before, adult mentors can provide numerous developmental and vocational benefits to young workers (e.g., teaching job-related and “soft” skills, providing educational guidance and references for future employment opportunities). In addition, it was believed that these early work experiences would *limit* the excessive and worrisome leisure activities of teenagers who were once perceived as an anti-adult “adolescent society” (Coleman et al., 1974).

Second, it is clear from the descriptive tables earlier that some youth work in jobs that they perceive as providing skills and workplace knowledge that may be useful in preparation for their future careers. Skill utilization and

learning opportunities on the job have been shown to promote the development of occupational values in adolescence (Mortimer, Finch, Ryu, Shanahan, & Call, 1996) and provide long-term vocational benefits in young adulthood (Mortimer, 2003). Skill utilization in the workplace can provide social benefits as well, improving relationships with family and peers and mental health (Mortimer & Shanahan, 1991; Shanahan et al., 1991). Youth are less likely to use illicit drugs and alcohol when early work experiences are connected to future careers and provide young people with opportunities to learn new job skills. For instance, Staff and Uggen (2003) using longitudinal data, found that work that provided opportunities to learn useful skills was negatively associated with substance use in the 12th grade, even after controlling for work hours and prior substance use. Similarly, Schulenberg and Bachman (1993) found that youth were less likely to drink alcohol and use illicit drugs when early work experiences were career relevant and provided opportunities to learn new skills.

Third, research shows that many working youth are able to balance their multiple commitments to teachers, parents, friends, and employers (Mortimer, 2003; Shanahan & Flaherty, 2001). For instance, Shanahan and Flaherty (2001), using longitudinal data from the YDS, examined how youth combined paid work, homework, extracurricular activities, volunteer work, household work, and leisure time with friends during the high school years. Using person-centered cluster analyses, the authors identified several distinct ways youth spent their time from 9th to the 12th grade. Importantly, youth adhering to the two most prevalent patterns of time use showed almost identical amounts of time spent completing homework, doing household chores, volunteering, and participating in extracurricular activities. However, those in one group did not work (20% of the 12th-grade sample), whereas those in the other group (35% of the 12th-grade sample) spent considerable time in paid work (averaging approximately 20 hours per week in the 12th grade). Furthermore, time spent with friends in nonstructured leisure activities, which according to routine activities theory (Osgood, 1999) is the most likely to foster problem behaviors, was fairly consistent across the various patterns of time use (ranging from 6 to 9 hours per week).

This detailed examination of time use in adolescence suggested that employed youth who limit their working hours make time for extracurricular activities as well as for household, school, and volunteer work. In addition, moderate hours of employment do not appear to limit one's use

of time, as most youth make time for nonstructured leisure activities. However, when young people are employed (both moderately and intensively), they tend to watch less television (Bachman, Safron, Sy, & Schulenberg, 2003; Osgood, 1999; Schoenhals et al., 1998). We are hardly experts on the developmental consequences of television use, but this does not strike us as an opportunity cost.<sup>3</sup>

Importantly, limited hours of employment during adolescence (20 hours or fewer per week during high school) do not harm school performance and may actually encourage success in school. For instance, research using diverse datasets and methodologies has shown that youth who work moderately, compared to youth who work intensively or not at all, tend to be the most involved in school activities, have the highest grade point averages, and have the lowest rates of high school dropout (D'Amico, 1984; Mihalic & Elliott, 1997; Mortimer & Johnson, 1998b). Moreover, studies show little difference between nonworking youth and those who work moderately in class rank, hours spent doing homework, or time devoted to reading outside of class (D'Amico, 1984; Schoenhals et al., 1998).

In one study, Bachman, Johnston, et al. (2011) used nationally representative longitudinal data from the MTF to investigate the long-term consequences of teenage employment for educational attainment. Multiple cohorts of eighth graders were followed for 8 years (modal ages 14 to 22), and 12th graders for up to 12 years (to modal ages 29 to 30). Bachman and colleagues used propensity score matching to compare nonworking, moderately working, and intensively working youth who had a similar likelihood of working intensively, to control for observed differences between students. The results showed that high-intensity workers were less likely to complete college than both moderate and nonworking youth. However, moderate work did not have long-term educational costs.

Other studies have shown that when youth maintain moderate hours of employment over the duration of high school, they are especially likely to attend and complete a 4-year college degree (Mortimer, 2003; Staff & Mortimer, 2007). Part of the reason for the long-term educational advantages of the "steady" workers, at least compared to youth who worked occasionally (i.e., limited hours and months of employment), sporadically (i.e., intensive hours but limited months of employment), or intensively (i.e., intensive hours and more continuous employment),

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<sup>3</sup>We are not aware of research on whether employment leads to time trade-offs with other, increasingly prevalent, leisure activities, such as video games and Internet use.

was that they followed a similar balanced strategy of continuous employment and moderate work hours in the years following high school. This strategy of employment during secondary and postsecondary school especially benefited the long-term educational attainment of youth who displayed limited educational promise (low grades and aspirations) at the onset of high school.

Early work is associated with immediate and longer-term benefits in other developmental domains as well. For example, early work experiences may help adolescents gain a sense of responsibility, independence, and self-confidence (Aronson, Mortimer, Zierman, & Hacker, 1996; Elder & Rockwell, 1979; Greenberger, 1988; Greenberger & Steinberg, 1986; Phillips & Sandstrom, 1990). Paid work can provide additional developmental advantages by exposing teenagers to new challenges outside of school (i.e., dealing with customers), by promoting valuable coping skills (such as how to deal with stress from work), and by helping them gain status among peers (Mortimer, 2003; Mortimer et al., 1996; Mortimer & Shanahan, 1991, 1994). As mentioned before, working youth, especially in jobs with learning opportunities and skill utilization, have been shown to have more crystallized work values than nonworking youth. The development of occupational values in adolescence is perhaps especially important among recent cohorts of youth, given that they are often undecided on what occupation they would like to hold as adults (Rindfuss, Cooksey, & Sutterlin, 1999; Schneider & Stevenson, 1999; Staff, Harris, Sabates, & Briddell, 2010).

Youth who limit their hours of work (especially to 20 hours per week or less) make time for school-related leisure and work activities. In addition, moderately employed youth tend to have higher educational attainment than their peers who work intensively or not at all. However, some research shows that even intensive work roles in adolescence can benefit occupational attainment, at least in the short term. For instance, youth who worked intensively during adolescence had lower odds of unemployment and significantly higher wages in the years immediately following high school compared to nonworking youth and those who worked moderately (Stern & Nakata, 1989). Carr et al. (1996) showed similar occupational benefits in young adulthood (i.e., higher wages and likelihood of employment) among intensive high school workers. Moreover, teenagers with a lengthy work history (total years employed) have “greater employability” in young adulthood (Mihalic & Elliott, 1997). In the YDS, those teenagers who worked over 20 hours per week throughout

most of their high school years averaged the most months of full-time work, as well as the highest wages, in the years immediately following high school (Mortimer et al., 2003; Staff & Mortimer, 2008). Thus, it appears that even long hours of work during adolescence can have positive short-term occupational benefits in the years following high school, despite the negative association with educational attainment.

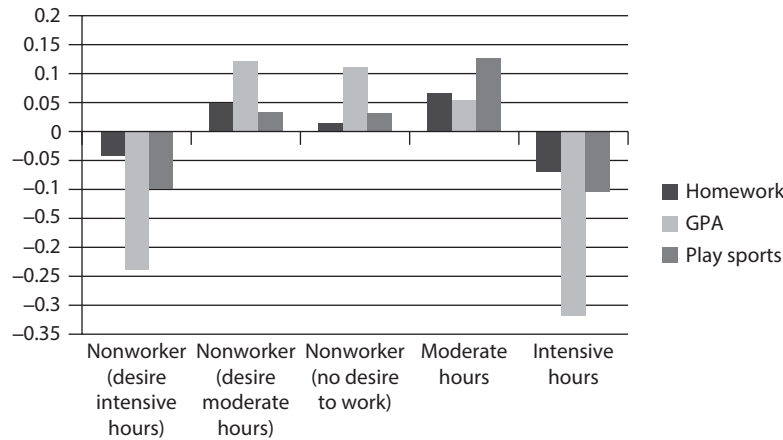
Finally, though work hours and problem behaviors are positively correlated during adolescence, intensive teenage work hours do not significantly predict problem behaviors in young adulthood. For instance, adolescent work hours were not associated with higher rates of alcohol, marijuana, or cocaine use in young adulthood (Bachman et al., 2002, 2011; McMorris & Uggen, 2000). However, Bachman et al. (2011) found that high-intensity teenage work in the 12th grade predicted higher rates of smoking at Age 28, even after controlling for past cigarette use. The authors suggested that intensive workers in high school who take up smoking may have great difficulty in kicking the habit. In addition, Mihalic and Elliott (1997) found that total years of adolescent work—not work hours—predicted higher rates of alcohol and marijuana use at Ages 27 and 28.

In summary, many studies have challenged the notion that all adolescent work experiences are bad and that youth are unable to balance their multiple commitments to family, friends, school, and employers. Indeed, a number of researchers have shown both short- and longer-term benefits in a variety of life domains (school, work, adjustment) when children and teenagers work moderately in “good” jobs that provide learning opportunities and skill utilization. Yet, as we discuss next, some scholars have questioned whether these associations are causal effects of work experiences or instead reflect the preexisting qualities and traits of youth who select into various work intensities of more or less quality.

### **Perspective 3. Paid Work Has Little Effect on Adolescent Achievement and Adjustment**

A third view of child and adolescent employment is that preexisting characteristics, motivations, and orientations of the individual, both observed and unobserved, explain work-related outcomes. For instance, intensively working youth may not receive lower grades because they have less time to devote to homework or studying than nonworking youth (e.g., Perspective 1). Moderately working youth do not necessarily earn higher grades than nonworking youth because their jobs teach them how to more effectively





**Figure 9.5** Homework, GPA, and sport participation (z-scored) by actual work intensity (for employed youth) and work intensity preference (for nonemployed youth) (combined 1992 to 2010 MTF 8th- and 10th-grade cohorts).

Source: Monitoring the Future.

balance competing commitments to school, family, and friends (e.g., Perspective 2). Instead, the relation between early work experiences and achievement may be spurious.

Students who display poor achievement and show little interest in school may choose to invest more time in employment than youth who have greater success in school (National Research Council, 1998). Longitudinal studies consistently show that poor school performance, low educational aspirations, and prior problem behaviors increase the likelihood of intensive work hours during high school. By contrast, youth with high motivation, academic ability, and other resources may know how best to balance investments in both school and work during the high school years and beyond, thereby maximizing their human capital acquisition through schooling, on-the-job learning, and other workplace knowledge.

Studies using data from the National Education Longitudinal Study (NELS 88) report little evidence of a relationship between paid work hours and school performance once accounting for prior differences between individuals (Schoenhals et al., 1998; Warren et al., 2000). Cross-sectional data from the MTF and other data sources show that a strong desire for paid work is associated with poor school performance, substance use, and other problem behaviors, irrespective of actual jobholding and hours of work (Bachman et al., 2003; Warren, 2002).

More recently, to address this selection hypothesis, Staff, Schulenberg, et al. (2010) used longitudinal data from three cohorts of 8th graders whose educational progress was tracked until the 12th grade. Using a within-person analysis (to control for time-stable unobserved factors), the authors found that youth performed worse in school

when they worked intensively compared to when they worked moderately or not at all. However, youth also had poorer school outcomes (low GPA, limited extracurricular involvement, low educational expectations, limited school effort, incomplete assignments, school misbehavior, truancy, and suspension), when they were not working but wished they could work intensively.

To illustrate this pattern, Figure 9.5 displays average levels of homework, grade point average, and sports participation by actual work hours (among youth who are employed) as well as work hour preferences for work (among youth who are not employed) using cross-sectional data from the MTF. To assess work hour preferences, teenagers in the MTF were asked, “Think about the kinds of paid jobs that people your age usually have. If you could work just the number of hours that you wanted, how many hours per week would you prefer to work?” Nonworkers were divided by whether they wished to work intensively, moderately, or not at all. As shown in Figure 9.5, participation in homework and sports, as well as GPA, are remarkably similar for youth who actually spent long hours on the job and nonworking youth who merely wished they could spend long hours on the job (but for whatever reason did not). Actual moderate work shows positive associations with these school outcomes, but so do nonworking youth who desire limited hours of employment. Testifying to teenagers’ strong motivation to work, only 1 in 20 youth were not employed and did not desire to work (either moderately or intensively). Moreover, employed youth rarely wished they did not work.

The observed positive relation between intensive work and problem behaviors may also reflect the influence of

adolescents' prior orientations, motivations, behaviors, and background characteristics. Precocious development theory (Newcomb & Bentler, 1988), in particular, posits that adolescents who show little interest in school and exhibit problem behaviors (e.g., substance use, delinquency, school misconduct) are more likely to drop out of school, spend long hours on the job, leave the parental home, establish residential independence, and cohabit or marry, partly because these more "adult-like" role statuses offer fewer restrictions on their problem behaviors. Illicit drug use, in particular, is often discouraged by parents and teachers, so early drug users have a higher probability of selecting into "precocious" social environments that offer "self-sufficiency and independence," particularly acquiring a full-time job and moving out of the parental home (Newcomb & Bentler, 1988, p.169). Longitudinal research has shown that drug use subsequently increases for these precocious youth in early adulthood (Krohn, Lizotte, & Perez, 1997).

Other studies (Bachman & Schulenberg, 1993) have reported a similar relation between alcohol use and adolescent work hours. Binge drinking during high school is associated with a syndrome of adult-like behaviors such as spending long hours on the job, not participating in school-related activities, getting an inadequate amount of sleep, and eating a poor diet. Evidence from the YDS also suggests that ninth graders with higher rates of substance use, school-related deviance, and law violations worked more hours in subsequent years of high school (Mortimer, 2003; Staff & Uggen, 2003). Thus, the positive association between paid work and problem behaviors may arise from an endogenous or reciprocal process because prior engagement in these behaviors influences the decision to work and the amount of hours spent on the job.

Other theories suggest that intensive work roles in adolescence are a correlate, but not a cause, of problem behaviors in adolescence. According to problem behavior theory (Jessor & Jessor, 1977), youth who have a strong desire to act like an adult (i.e., are "transition prone") are more likely to engage in problem behaviors than youth who do not have this desire. Alcohol use, smoking, drug use, and sexual activity, in particular, are ways to claim this new adult status. Using a longitudinal sample of middle school students as well as college students from the early 1970s, the Jessors identified interrelations among marijuana use, sexual intercourse, drinking, heavy drinking, and general deviance. These behaviors were negatively correlated with conventional behaviors (e.g., school achievement and church attendance). Jessor and Jessor (1977) concluded that these

various transition behaviors represented a syndrome of adult-like activities that were often incompatible with more age-appropriate activities, like attending school. Getting a job, and spending long hours on the job, can also be a way to claim a more mature status for transition prone youth.

Prior involvement in delinquency and substance use may encourage early adult-like work patterns, but prior orientations toward work and school also may influence the motivation to work in adolescence. Once these differences are controlled, the effects of intensive work hours on substance use, delinquency, and school-related misconduct diminish to statistical nonsignificance (Apel et al., 2007). Youth who have less success in school and extracurricular activities are likely to invest themselves in paid work and to prefer work to school. Moreover, prior engagement in delinquency, such as drinking, having sex, using drugs, and misbehaving in school, may predispose some youth to enter work environments that offer fewer social constraints on these behaviors than do school and family (Newcomb & Bentler, 1988). This perspective contends that delinquency precedes involvement in work and any observed associations between paid work and deviance are spuriously related to preexisting differences between individuals. Evidence based on the annual MTF surveys suggests that an early desire for youth to work (measured before youth obtained jobs) predates both intensive work hours and problem behaviors in later adolescence (Bachman et al., 2003). Moreover, Staff, Osgood, et al. (2010) found similar levels of delinquency and substance use when youth were not working but wished they could work intensively and when they actually spent long hours on the job, even after controlling for time-stable sources of spuriousness.

In summary, paid work may have little association with short- and long-term achievement and social development during the transition to adulthood once preexisting and unobserved differences between students in their motivation, ability, and effort are taken into account. In the final section, we again highlight research that stresses the importance of selection into early work roles. However, this body of research suggests that paid work experiences *do* matter for achievement and adjustment, but these effects are conditioned by preexisting individual characteristics.

#### **Perspective 4. The Good and Bad Effects of Work Depend on the Worker**

As mentioned before, demographic background characteristics such as gender, ethnicity, and parent(s)' income and education predict whether teenagers work, what kinds

of jobs they hold, and how much they work. In particular, African American and Latino/a American teenagers are less likely to be employed than European American youth, but they average longer hours of employment during the school year when they are employed. Similarly, youth in low-SES households (socioeconomic, i.e., low education, low income, or both) are also less likely to be employed, but they, again, average more hours when they are employed than their more advantaged peers. These sociodemographic differences in work status and hours are evident even after controlling for prior achievements, orientations, and problem behaviors that select youth into work (Perspective 3).

The short- and long-term consequences of paid work may depend on the opportunities available to young people. As mentioned previously, poor youth are less likely to work than nonpoor youth. Poor youth who reside in poor neighborhoods are doubly disadvantaged in that they face a limited and often highly competitive job market (Entwisle et al., 2000; Newman, 1999), at least compared to youth who have more opportunities to find their way into the labor market. For disadvantaged youth in poor neighborhoods, just having a job might constitute a rare opportunity to earn some spending money and save for longer-term goals. Early work may be a positive experience for poor children and teenagers in low-income neighborhoods, instilling “work readiness” and positive work orientations. In contrast, youth in more prosperous neighborhoods find what was once called a “youth labor market” characterized by an abundance of low-level retail and service jobs (although it is important to note that these jobs are disappearing) as well as schools with numerous opportunities for extracurricular activities. The premature affluence (Bachman, 1983) associated with work for high-SES youth may intensify delinquency and substance use and thereby limit participation in the many school-related activities that are available. In addition, the abundance of jobs in more prosperous neighborhoods can sometimes foster more negative work attitudes and misbehaviors in young people, such as tardiness, absenteeism, and giving away of goods and services, because youth in these neighborhoods may find it easy to lose and then regain work. Thus, structural opportunities of young people may influence their involvement in paid jobs as well as both beneficial and harmful activities.

For youth from disadvantaged backgrounds, who generally have less connection to the educational system than their more advantaged peers (Kerckhoff, 2002), and who are more likely to select into intensive work roles in

adolescence (Mortimer et al., 2003), research suggests that the workplace may be an important venue for vocational development. For instance, among a sample of mostly lower SES youth in Baltimore, Entwisle et al. (2000) found that early work involvement increased the skill level of the job held in later adolescence. The authors speculated that early employment (e.g., during middle school) provided youth an alternative arena to develop their skills and increase the chances of future employment, especially if they had little interest in school. Consistent with this notion, teenagers in the YDS who engaged in more continuous and intensive employment during high school reported more work-related learning opportunities than did those who limited their hours (Mortimer, 2003). Because working is highly path-dependent, teens who are able to acquire jobs at one time are significantly more likely to be employed a year later (Sum et al., 2014), and to be reaping the potential benefits of those experiences.

Do the effects of work depend on the social background of the worker? In particular, long work hours may not be as harmful for those youth who come from more disadvantaged backgrounds. Compared to their more advantaged counterparts, low-SES youth may be working for different reasons (e.g., for family expenses or college) or be more likely to need to work more hours. Thus, low-SES youth may be able to avoid some of the problem behaviors associated with intensive work. Low-SES youth also have a harder time obtaining a job (due to the more competitive market), which means that this greater selectivity into employment might translate into a better job (e.g., more opportunities to work with adults, skill utilization, or vocational development) or a better worker (i.e., more serious about keeping job). For young, economically disadvantaged males, paid work actually increased their chances of high school completion (Entwisle, Alexander, & Olson, 2005). Farkas and colleagues (Farkas, Olsen, & Stromsdorfer, 1981; Farkas, Smith, & Stromsdorfer, 1983) revealed similar benefits of employment for the school enrollment of low-income youth. Lee and Staff (2007), using propensity score methods to control for observable differences between individuals, found that long hours on the job do not encourage high school dropout among youth who had especially high or low probabilities of intensive work. Thus, the effect of teenage work on school dropout is conditional on young people’s propensity to work long hours on the job. The differential effects of work hours extend beyond just achievement-related outcomes. Research by Johnson (2004) and Bachman, Staff, O’Malley, and

Freedman-Doan (2013) found that the effects of long work hours did not increase the alcohol and substance use of African American and Latino/a American youth.

Staff and Mortimer (2007) have suggested that employment patterns during the high school years can help disadvantaged youth establish strategies of time management that persist in young adulthood and facilitate higher educational attainment. Using data from the YDS, the authors found that youth from more advantaged backgrounds were likely to pursue a steady pattern of low-intensity and high-duration work during high school, followed by a similar pattern of part-time work combined with schooling in the years immediately following high school graduation. The inclusion of accumulated months of postsecondary “school and part-time work” mediated the benefits of steady high school work on subsequent receipt of a bachelor’s degree. By contrast, youth from disadvantaged backgrounds were likely to pursue more intensive work (high average work hours and high employment duration), followed by full-time work immediately after the scheduled date of high school graduation. More intensive workers had little likelihood of acquiring 4-year college degrees, and they were more likely to feel they were in “career” jobs during the years following high school (Mortimer, Vuolo, Staff, Wakefield, & Xie, 2008). However, when disadvantaged low-SES youth followed a steady work pattern during high school, their educational attainment and longer-term wages were especially enhanced (Staff & Mortimer, 2008).

In summary, each perspective that we have reviewed, positing a different relation between paid work and development, is supported by empirical research. Paid work can lead to adjustment and achievement problems, typically if the work is of high intensity and of poor quality. However, not all work is bad, and moderate work has been associated with well-rounded combinations of work, school, and family pursuits that benefit youth long term during the transition to adulthood. Further complicating the picture, *effects* of paid work are greatly diminished when selection issues are more fully addressed, such as prior achievement, motivation, and problem behaviors. Also, employment may matter for some youth and not for others, as prior orientations, leisure involvements, and demographic background features influence the decision to work and how much to work—as well as engagement in school and family—in adolescence. In the conclusion of this chapter, we return to some of these issues and suggest future research directions to assess the short- and longer-term consequences of adolescent paid work.

The research reviewed thus far is confined to studies of children and adolescents in the United States. We now turn to the literature on youth employment in an international context.

## CHILD AND ADOLESCENT EMPLOYMENT OUTSIDE OF THE UNITED STATES

Given manifest differences in the patterns, quality, and circumstances of youth employment even within a single country, the United States, it is likely that contextual variability across countries would render youth employment precursors and outcomes even more variable. Paid work during adolescence would likely be quite different in character and have distinct meanings across countries. For example, in nations like Germany, Austria, and Denmark, with strong “dual systems” of vocational training and classroom experience, learning in school and work environments is complementary and compatible by design, with the intention to foster human capital acquisition. In contrast, in the United States, there is little coordination between the workplace and the high school, except in specific circumstances (e.g., internships, job shadowing). One might expect the advantages of apprentice-type teen work would be much greater than teen “free market” labor force experience. In the developing world, child labor is more likely to take the form of agricultural work, work in extractive industries, or street trade, with little regulation, than in the developed economies. We therefore now turn to studies of adolescent work around the world.

### Worldwide Scope of Child Labor

Although there is some variation in the definition of child labor outside of the United States, the term is mostly understood in the field as conforming to the International Labour Organization’s (ILO) earlier definition of labor as “the production of economic goods and services,” which covers all market-oriented activities of children and excludes chores in the children’s own household or work activities tied to school (e.g., homework; participation in sports or academic clubs, etc.). The ILO recently revised its definition of child labor in order to encompass both economic activities and unpaid services like household chores (ILO, 2008). This way, a broader concept of children at work has been sought (Edmonds, 2008), one that represents all aspects of child labor in the world, including unpaid



market-oriented activities, exploitative work or jobs under hazardous conditions, household chores or babysitting family members, and other nonmarket activities, such as small repairs or caregiving for children, the elderly, or disabled (Bourdillon Levison, Myers, & White, 2010; Guarcello, Lyon, Rosati, & Valdivia, 2005).

Similar to what has been happening in the United States, a general decline in the prevalence of working children has occurred worldwide. For instance, by the beginning of the 21st century, the absolute number of children (ages 5 to 14) at work declined from 211 million in 2000 to 191 million in 2004, which represents a decrease from approximately 18% to 16% of all children in this age cohort (Castro, 2010; Hagemann, Diallo, Etienne, & Mehran, 2006; ILO, 2006). This overall decline in youth employment varies considerably by country, at least according to the UNICEF's fourth round of the Multiple Indicator Cluster Survey (MICS-4) ending in 2010. In Brazil, for instance, only 3% of children participated in the labor market, compared to 21% of children in the Dominican Republic and 34% in Peru. In the Asia and Pacific region, child employment ranged from 13% in Bangladesh to 34% in Nepal. The rates of youth employment showed the greatest variation in Africa. In Botswana, 9% of children worked, compared to 53% in Ethiopia and 57% in Guinea-Bissau. In fact, recent estimates by Diallo, Hagemann, Etienne, Gurbuzer, and Mehran (2010) show that Sub-Saharan Africa is the only region in the world to experience a slight increase in rates of children in employment in recent years, growing from approximately 26% in 2004 to 28% in 2008.<sup>4</sup>

An important trend reported by the ILO is the recent worldwide decline in the numbers of children employed in hazardous work, from around 6% (76 million) to 4% (53 million) of all children in the age cohort. Hazardous work refers to work that exposes children to physical, psychological, or sexual abuse, according to ILO's Convention 182 (ILO, 1999). Sub-Saharan Africa is the region with the highest percentage (approximately 13%) of children in this kind of work. The general decline in children working in hazardous jobs is due to many factors, such as the process of urbanization that reduces the proportion of children living in rural areas, the expansion of the educational system across the world, and overall improvements in households' living standards (Bourdillon et al., 2010).

<sup>4</sup>Sub-Saharan Africa is the region with the highest proportion of working children, whereas Asia and the Pacific is the region with the highest absolute numbers (96 million).

## Entering the Labor Force

As we reviewed earlier, children from disadvantaged backgrounds in the United States who have little interest or limited connection to school are most likely to invest their time in paid work. Research on child labor outside of the United States has devoted much attention to the role that poverty plays in children's entry and engagement with paid work (see, for instance, ILO, 1999, Convention No. 182). Worldwide, children are mostly likely to be found working when faced with family poverty, low-quality schools, and ineffective regulations that are unable to protect their health and well-being. Higher family income levels, higher quality of schools, and stable regulations are effective in keeping children and adolescents in school until at least the end of compulsory education.<sup>5</sup>

However, empirical evidence that child labor is always a symptom of extreme poverty is mixed. For instance, in a study of 14 countries in Latin America, Barros, Mendonça, and Velazco (1994) found that income differences accounted for less than 50% of the variation in children's labor force participation. Still, children's employment rates were lower in Brazilian metropolitan areas with lower poverty rates. In another study of Pakistani children, Bhalotra (2003b) found that poverty is related to a higher propensity to work for boys but not for girls. In studies of Ghana youth, Canagarajah and Coulombe (1997) and Boozer and Suri (2001) found that income differentials have little to do with the household decision on the allocation of children's time between school and work. Both studies argue that other family characteristics, beyond socioeconomic conditions, such as the parents' level of educational aspirations for their children, as well as the perception of the quality of the local school system, play an important role in the allocation of the children's work time.

While family poverty is certainly an important precursor of children's employment, especially in contexts where there is little institutional support for education or the regulation of child labor, cultural differences also play an important role in youth work. As Bourdillon et al. (2010) have argued, in some contexts employment is viewed as a natural part of childhood, even among children who are not poor. In India, for instance, children in lower castes or classes often

<sup>5</sup>The end of compulsory education occurs at the age of 15 in many countries. ILO Minimum Age Convention 138 establishes that 15 years old—14 in very poor countries—is the minimum age for admission to employment in developing countries (ILO, 1973).

have to work, whereas those who are from more advantaged backgrounds attend school. Children's agency is also found to be an important determinant of youth work in international research, just as it is in the United States. Children are able to understand the context around them and they engage in paid work not only to help to meet the family's needs, but because they enjoy earning their own income. Own earnings can, in turn, improve their status within the family and bring a sense of independence. Children and adolescents take pride in their contribution to their own and to their family's welfare (Bourdillon, 2006; Levison, 2000; Liebel, 2004; Woodhead, 2001).

### Types of Jobs

The type of work done by children in many developing countries is distinct from youth in the United States as well as many other countries in two important ways. First, a notable feature of children's employment in many developing economies is that only a small percentage work for pay outside their households (Bourdillon et al., 2010). Instead, they work mostly helping out with the family business, farm, and even inside the household, doing domestic chores. For instance, using data from UNICEF's MICS, Edmonds and Pavcnik (2005) showed that, among children in 36 developing countries, an average of 25% engaged in the labor market, but only around 2% worked for pay outside their households, and 65% performed domestic work. That means that the majority of children participating in the labor force in these countries are working for their own family, without pay, and helping out with the family business.

Second, compared to the United States and other developed countries, a higher proportion of working children in developing countries are engaged in hazardous work (Diallo et al., 2010). A subcategory of this group comprises the worst forms of child labor, including slavery, prostitution, drug trafficking, and participation in armed conflicts as child soldiers. Because these activities are illegal, it is very difficult to obtain reliable estimates of their prevalence (Hindman, 2009b). The International Program for the Elimination of Child Labor (IPEC, 2002) estimates that 1.8 million children are involved in sexual exploitation, 1.2 million in trafficking, 5.7 million in bonded labor, 600,000 in drug production and trafficking, and another 300,000 participate in armed conflicts. The total (9.6 million) accounts for roughly 7.5% of all hazardous workers and approximately 4% of all child workers around the world.

### Perspectives on Youth Work in an International Context

Earlier in this chapter we introduced four perspectives on child and adolescent work based on research in the United States. Consistent with Perspective 1, scholarship on child labor outside of the United States and especially in developing countries has mostly focused on the negative consequences of this activity—especially of hazardous work—for children in terms of their health, educational achievements, and long-term occupational attainments. However, some scholars have argued that the consequences of paid work are more complex and working can even be beneficial depending on the amount of time invested in paid work and the quality of these jobs (Perspective 2). Scholars using international data have also questioned whether the purported negative effects of child labor on development are spurious (Perspective 3) or depend on family background or reasons for employment (Perspective 4).

As discussed by Bourdillon (2006) and Hindman (2009a), much of the research and policymaking about child labor assumes that work will have negative consequences for children's lives in both the short and long term. Instead of working in a job, childhood is assumed to be a time of learning in school, spending time with family, and playing with friends. At the core of this perspective are assumptions that child labor reduces school attendance and performance and ultimately undermines longer-term educational attainment. Allais and Hagemann (2008), for example, used ILO's Statistical Information and Monitoring Programme on Child Labour (SIMPOC) data from 34 developing countries and found that the higher the incidence of child labor in a country, the lower the literacy rates and other educational outcomes. Ray and Lancaster (2005) analyzed the association between work and school attendance and performance in seven countries—Portugal, Namibia, Philippines, Sri Lanka, Cambodia, Panama, and Belize. They found that in six of the seven countries (not Sri Lanka), child labor was negatively associated with educational outcomes. Similarly, Cavalieri (2002) found that youth employment reduced the likelihood of completing each school level in Brazil.

Some scholars have questioned whether the negative relation between early employment and educational outcomes is spurious (Bhalotra, 2003a; Liebel, 2004), and instead reflects prior orientations, school-related behaviors, and socioeconomic advantages. Different methodological strategies have been used to address whether there is a causal relation between children's participation in the

labor market and educational attainment (Bourdillon et al., 2010; Ray & Lancaster, 2005). For instance, Boozer and Suri (2001) found child labor was negatively associated with school attendance in Ghana even after using rainfall variation and income fluctuations as instruments to help rule out potential unobserved spurious factors. In a similar vein, Goulart and Bedi (2008) used instrumental variable methods to understand the relation between youth work and education in Portugal, and their results indicated that participation in the labor market was associated with a reduction in school success. Beegle, Dehejia, and Gatti (2009) also employed instrumental variable methods to analyze tradeoffs between child labor and education in Vietnam and found that employment reduced educational attainment. However, Beegle et al. (2009) also found that youth work was positively associated with the likelihood of future employment, which could potentially offset the short-term negative effects of work on educational attainment.

Domestic work also can have an impact on children's time allocation and reduce time available to attend school, especially given its high prevalence among children in developing economies. Assaad, Levison, & Zibani (2010) used a probit model that allows for simultaneous determination of domestic work and school attendance among girls in Egypt and found that a high domestic workload reduced attendance rates. Similar findings linking children's domestic work and reduced educational attainment have been reported in Peru (Levison & Moe, 1998), Mexico (Levison, Moe, & Knaul, 2001), and China (Guarcello et al., 2005).

In addition to diminished schooling, scholars have expressed concern that working during childhood and adolescence can lead to physical injuries, exposure to toxic substances, psychological stress, and long-term health problems (Edmonds, 2008, 2010). Research has shown adults' self-reported health status in Brazil is worse among those who entered the labor market early (Kassouf, McKeel, & Mossialos, 2001). O'Donnell, Rosati, and Doorslaer (2005) and Beegle et al. (2009) reported a similar pattern in Vietnam. In Cambodia and Guatemala, however, Guarcello et al. (2005) found no clear relation between work and health, though their analyses were limited to nonmarket work activities.

These studies suggest that paid work in childhood and adolescence can hinder educational attainment and be harmful to health and wellbeing. Others have argued that rather than competing with schooling, paid work can be a natural part of children's development, helping them mature and gradually adapt to adult life. In this

perspective, the transition from school to work is not conceived as an abrupt transition but more as a continuum (Davidson, 2005), with "children gradually moving into the activities of adults as their competences develop and opportunities arise" (Bourdillon, 2006, p. 1202). Children and adolescents can benefit from early working experiences, acquiring skills and competences that will help them in future employment, and can even compensate for reductions in formal education. Early work, in appropriate conditions, can enhance children's self-confidence, sense of responsibility and independence (Bourdillon et al., 2010). As Bissel (2003) and Liebel (2004) pointed out, working children in developing countries are usually proud of their work and of the income they can bring to help support the family, boosting their confidence and even their status in the household. Work can be viewed as an important preparation for adult responsibilities.

Furthermore, as Edmonds (2008) has noted, it is hard to quantify the importance of children's work in the family economy, mainly because most working children do unpaid work within the family domain, whether it is business-related or domestic work. Studies that have focused on the income contribution of children found that, in Bolivia, they are responsible for approximately 13% of the household total income (Psacharopoulos, 1997), and, in Nepal, 11% of the total agriculture production (Menon, Pareli, & Rosati, 2005). In Brazil, Ilahi, Orazem, and Sedlacek (2005) found that working children contributed 17% of household income in urban areas and 22% in rural areas. Working children can provide help to the family economy in multiple ways (Levison, 2000). They not only can help to pay family bills and other household expenses, they can help to pay for their own educational expenses. Woodhead (2001) showed that working children in different parts of the world, such as Bangladesh, Ethiopia, the Philippines, El Salvador, Guatemala, and Nicaragua, were able to use part of their income to afford additional educational costs. A working child not only helps to support himself/herself and the family in general, but may also have a special impact on younger siblings (Bourdillon et al., 2010; Edmonds, 2008). Children's earnings and help with the family business allow them and, in several cases, their younger siblings, to attend school by paying for school tuition and fees, school clothes and supplies, and transportation. Skoufias (1994) found that the higher the income earned by the older sibling, the more time spent by younger siblings at school in India. A similar pattern was found for Brazil (Emerson & Souza, 2008), Nepal

(Edmonds, 2006b) and Paraguay (Patrinós & Psacharopoulos, 1995), where older siblings are more likely to work than the younger ones, and even help to afford the latter's school expenses.

These studies suggest that in many societies, paid work can be a natural part of childhood, either as part of the typical family survival strategy or simply as something sought by the children as a way to prove themselves as capable agents. Although full-time work and hazardous work conditions can pose health risks and hinder children's academic and social development, there is growing evidence that appropriate work activity is positively associated with children's educational and health outcomes, and even provides economic and social benefits for their families (Bourdillon, 2006; Boyden, Ling, & Myers, 1998; Levison, 2000; Liebel, 2004; Lieten, 2005; Woodhead, 2001). As noted earlier, in several cases, work, instead of hindering formal schooling, actually helps children to afford school tuition and fees and even supports younger siblings' expenses with school.

The conceptual differences between these perspectives are expressed in the terminology used to represent the study of children at work. The term "child labor" is widely employed by studies to represent work below the minimum legal age, implying that such work is intrinsically harmful to children. Critics argue that this concept, as used in most ILO statistics and other agencies' reports, does not allow a necessary differentiation between work that harms and work that benefits children (Lieten, 2006). In contrast, the term *child work* has been used, mainly by researchers, to better grasp the multiple dimensions and manifold consequences of children's labor force participation, sometimes harmful, but at other times beneficial. Besides, although no clear differences can be detected between the words *labor* and *work* in English grammar, in practice *labor* tends to represent paid employment and *work* represents both paid and unpaid employment (Bourdillon, 2006). Thus, considering that the majority of working children do not work for pay, the term *child work* appears to more accurately represent the work children do internationally.

Several governments around the world have created policies that aim to abolish child labor or establish minimum age requirements for youth employment with the hopes of increasing school attendance and improving academic performance. Among the most successful in this regard are the following programs: Oportunidade in Mexico, Bolsa-Familia in Brazil, and Food for Education in Bangladesh. However, policies addressing child work, especially in developing economies, must take into account

the importance of children's work for the family's survival strategies. If not, these policies could end up endangering children and the whole family, which could, in turn, lead to an increase in the intensity or danger of child work (Bourdillon et al., 2010; Edmonds & Pavcnik, 2005; Jafarey & Lahiri, 2002). Attempts to eliminate child labor, without appropriate consideration of its consequences for family welfare, can be especially harmful for many families in developing economies (Edmonds & Turk, 2004).

Furthermore, some scholars contend that the focus of policies governing child work should change from abolition and minimum age restrictions to the immediate conditions of work and the contexts in which work occurs. For instance, White (2009) argued that, instead of preventing children from working, interventions should protect them in ways that increase the likelihood that their work experiences will be beneficial. Attention should be directed to the quality of relationships at work, the avoidance of noxious and dangerous work, and guarantees that children's rights will be respected in terms of working conditions, hours, and salaries.

Further advances in this debate and, more generally, in knowledge about children's employment in developing countries depend, however, on improvements in methodological strategies. Snapshots and cross-sectional data sets, which are the most common data sources for studies in these countries, do not offer enough information to understand the multiple causes and consequences of children's work. An expansion of longitudinal studies in the developing world—like the Monitoring the Future study and the Youth Development Study (Mortimer, 2003) in the United States—could help to overcome this gap, offering insights on the role that work plays in children's developing life course (Bourdillon, 2006; Edmonds & Pavcnik, 2005).

## FUTURE RESEARCH

We see at least four promising areas of new research on youth employment.

### Future Direction 1. The Disappearance of Teenage Work in the United States

First, research is only starting to examine the consequences of the absence of work during adolescence. In previous generations in the United States, and up until very recently, it was normative for adolescents to work during the school year, and even more so during summers. In the Youth



Development Study (Mortimer, 2003), 93% of students in the 1991 high school graduating class reported that they had held employment at least some time during the 10th, 11th, and 12th grades while school was in session. Their parents also worked as teenagers, and believed that this experience contributed greatly to their own preparation for work and for adulthood in general. Despite warnings from some developmental psychologists (Greenberger & Steinberg, 1986), parents overwhelmingly approved of their children's employment (Phillips & Sandstrom, 1990). However, as we have documented from surveys of successive Monitoring the Future cohorts (Figure 9.2), teenage employment in the United States has been declining since the early 1980s. It has repeatedly fallen during economic recessions, without recovering thereafter. Sum et al. (2014) document plummeting teen employment rates from 2000 to 2011 in the 100 largest U.S. metropolitan areas. Since the beginning of the current Great Recession, the decline has been precipitous. The teen employment to population ratio among 16- and 17-year-olds is currently just 15%, the lowest level since the Bureau of Labor Statistics began collecting such data (Smith, 2011). Is the United States now witnessing the end of the teenage job?

We also observe a long-term historical decline in the variety of jobs typically filled by youth. Many of the jobs formerly held by teenagers are, for one reason or another, no longer available to them. As the farm sector has diminished, and many family farms have been replaced by "agribusiness" firms, a major source of employment for rural youth has eroded. The rise of "self-service" has virtually eliminated gas station attendants and many jobs in the retail sales sector (salesclerks) as consumers now perform these activities by themselves in brick-and-mortar stores or shop on the Internet. With the transformation and diminution of the clerical sector, fewer teenagers have opportunities to work as typists or secretaries. Other formerly "teenage jobs" have been taken over by older workers. For example, the newsboys or girls, who tossed papers onto doorsteps from their bikes, have been replaced by adults, who deliver newspapers door-to-door from their cars. Many retirees, in an attempt to supplement their fixed incomes, now perform jobs that teenagers used to fill, like the elderly who help food shoppers bag their groceries. Much of the decline in teen employment may be attributed to increasing competition between the young and old for jobs in general, which intensifies during recessionary periods (Smith, 2011). When given a choice, employers will often favor adults over teenagers, as teens are seen as less mature and less stable workers.

Still, some teenagers continue to find work. In addition to continuing to monitor trends in the availability and character of paid work, an important question for future researchers to address is whether the bases of selection to employment have changed. If teenagers are competing for a more concentrated and ever-diminishing number of job openings, employers may be much more selective, now and in the future, than in a prior era. Although the more advantaged youngsters have been more likely to be employed for some time, the likely accentuation of this trend may make it even more probable that in the future more disadvantaged youth, who appear to have the most to gain from employment, may be increasingly unable to find work. The development of human capital through paid work, the apparent strategy of the "most invested workers" (those who worked intensively throughout high school) in the Youth Development Study (Mortimer, 2003), who had little interest in school, is no longer a viable option for most teens. Those youth who followed this pattern moved quickly into adult-like "careers" after leaving high school (Mortimer, et al., 2008). Moreover, employers may increasingly avoid hiring youth who exhibit any sign of behavioral problems, thereby reducing the dangers of "precocious maturity" or "pseudomaturity" through paid work, but also lessening the exposure of such youth to an incentive structure that rewards more conforming behavior.

We know little about what it will mean for them if teenagers in the United States are no longer able to do paid work. Future research should continue to monitor adolescent time use. Are teens currently spending more time than their predecessors doing more housework, more schoolwork, or are they spending more time in more potentially harmful, discretionary activities, simply "hanging out" with their friends (in real life or online)? Clearly, these alternative pursuits have different appeal to distinct groups of teenagers, depending on their social backgrounds, ambitions, and resources.

Will teenagers increasingly seek volunteer positions, or unpaid internships, to obtain valuable work experience? Will their parents, recognizing the dearth of opportunities to gain work experience in the ways they themselves did, encourage their children to volunteer? Volunteering is, in many respects, similar to paid work, as teen volunteers work in organizations, operated by adults, which have similar routines and imperatives. Volunteers learn to take responsibility, be on time, and cooperate with others, lessons that may easily transfer to the work environment. Both students and their parents may see volunteering as even preferable to paid work. Youth volunteers may have

access to a broader range of organizations and exposure to adult workers in a wider variety of occupations that would typically occur in teen jobs. For example, teenage volunteers may be welcome in many service and nonprofit organizations. As volunteers, adolescents may also have more discretion in their employment than paid workers, allowing them to flexibly shift their hours and involvement altogether, as time demands wax and wane in their school and other activities.

### **Future Direction 2. The Influence of the Global Economic Recession on Worldwide Trends in Child and Adolescent Labor**

It is well established that economic shocks, at the macro- and micro levels, have negative effects on the household economy. These in turn can lead to an increase in the use of child work as a strategy to cope with the decline in family income. Studies of the household economy have shown that this pattern holds for Brazil (Duryea, Lam, & Levison, 2007), where the household head's unemployment led to an increased use of children's work. In Cambodia, Guarcello, Kovrova, and Rosati (2008) showed that shocks such as floods, drought, and, mainly, crop failure, preceded more intensive use of child work. In India, crop failure also impacted children's employment as well as school attendance (Jacoby & Skoufias, 2008). Guarcello, Meali, and Rosati (2010) found that both economic shocks and credit constraints pushed more families to send children to work in Guatemala. When family income increases and a household improves its overall living standards, a decline in the use of child labor follows. This trend is found in studies of Vietnam (Edmonds & Turk, 2004), South Africa (Edmonds, 2006a), Tanzania (Beegle, Dehejia, & Gatti, 2003), the Philippines (Yang, 2004), and in comparative studies of several developing countries (Edmonds, 2005; Edmonds & Pavcnik, 2005).

Predictions that the recent global economic recession would lead to an increase in child work across the world (Koseleci & Rosati, 2009; Mosel & Sarkar, 2009; UNICEF, 2009), however, have not yet been confirmed. For instance, Rosati and Lyon (2011) analyzed the impact of the 2008 global financial crisis on children and youth's employment in Latin America (Brazil, Ecuador, and El Salvador) and Indonesia. Although the evidence was somewhat mixed, none of these countries appeared to suffer major effects of the crisis on children's employment and schooling rates between 2007 and 2009. First, they found that, although Indonesia and El Salvador experienced rises in children's

employment, most of the working children were kept in school, not leading to a rise in school dropout rates. Brazil and Ecuador, in turn, experienced a slowing of the decline in children's employment rates, resulting in stability. Second, the only country where children's working hours rose in the period was El Salvador, while the others remained the same. Third, the share of children working in the agricultural sector rose in Ecuador and El Salvador, but fell in Brazil and remained stable in Indonesia. Fourth, working conditions for youth deteriorated in Latin America, where youth unemployment rates rose, but not in Indonesia. Though Rosati and Lyon (2011) concluded that the crisis had only a moderate effect on these countries' child employment conditions, they cautioned that it might be too early to truly understand the effects of the crisis on children's work and that we need more than descriptive evidence to support an accurate interpretation of links between broad changes in child labor, schooling, and the economy.

Evidence relating to unemployment among older youth seems to be clearer. The ILO's (2012) report on employment trends for youth showed that the recent global recession ended the steady decline in youth unemployment rates around the world. Currently, around 75 million youth are unemployed, which corresponds to 12.6% of the 15- to 24-year-old group. ILO projects that this rate will be kept at this level until 2016. In comparison to adults, youth workers are especially affected, with a youth-to-adult unemployment ratio of 2.8 in 2011. The highest unemployment rates in the developing world, in 2011, were found in North Africa (28%) and the Middle East (27%), and the lowest in East and South Asia (9%), Sub-Saharan Africa (11%), and Latin America and the Caribbean (14%).

Although both developed and developing countries have been affected, the ILO's report showed that the developed economies have been the most harshly affected by the great recession. The average youth unemployment rates in these countries rose from 12% in 2007 to 18.1% in 2011, the highest since the 1990s, and the projections suggest that this rate will not decline until 2016. Within this group, some countries were more affected than others. The countries where youth have been suffering the strongest negative impact, in terms of their unemployment rates, are in the European Union: Spain, with a rate of 46.4%; Croatia, with 35.8%; and Slovakia, with 33.6%. The United States was also highly affected, with an increase from 10% in 2006 to 19.6% in 2010 (U.S. Congress Joint Economic Committee, 2010). Though some studies have argued that there is scarce evidence on the strength of the link between

economic shocks and child work (Ferreira & Schady, 2008; Kane, 2009), more research is needed on the short- and longer-term effects of economic shocks, especially how the most recent economic recession has influenced worldwide trends in child and adolescent employment.

### **Future Direction 3. A Better Understanding of What Types of Work Are Beneficial or Detrimental for Which Types of Youth**

We have pointed out the many benefits of youth employment, as well as potential drawbacks. As this review makes clear, however, studying the consequences of employment for teenagers is a complicated endeavor. Benefits and costs of paid work depend on the degree of time investment in work and school activities, the types of jobs youth hold, the intrinsic and extrinsic qualities of their occupational experiences, and the characteristics of the children who work, including their resources and motivations. Because all of these factors are likely to change over time, understanding the significance of children's work for their development and attainment requires continued longitudinal monitoring. For example, with the general decline in youth employment, the work experiences and contexts available to youth who have paying jobs have contracted. Employment among youth is increasingly concentrated in the few remaining jobs available to them, particularly in the food service industry. Those teenagers who do find work are more likely than teen workers in past decades to be servers, cashiers, or perform other functions in restaurants. We need to know more about the consequences of this kind of work. Restaurant employment may be increasingly shunned by more advantaged youth seeking experiences that will enhance workplace learning, vocational growth, and service opportunities. Still, as Newman (1999) pointed out years ago, such jobs may continue to be sought after by minority and disadvantaged youth. Future research should pay greater attention to the characteristics of youth that moderate the effects of these and other paid work experiences.

Furthermore, if teens increasingly move toward unpaid work experiences, we will need to know more about whether volunteering has the same costs and benefits as paid work. There are reasons to believe that volunteering could be a more salutary experience, as it enables youth to work alongside adults and learn about workplace routines and responsibilities in an environment that emphasizes service to others. The problem of excessive hours of work would be reduced, given the lack of monetary incentive

and presuming little pressure from volunteer supervisors to work more than teens would like. To address the issue of costs and benefits, researchers need longitudinal studies that trace the nature of teen volunteering, whether, like paid work, volunteer tasks tend to become more time-consuming and complex as teens grow older. Future studies of volunteer work should monitor the wide variety of outcomes that have been linked to paid work (like school performance, problem behavior, work values, and the self-concept) so that it can be determined whether teen volunteer work is a positive or negative trend for their development.

Moreover, in view of the diminishing availability of paid work, researchers need to give greater attention to the variety of ways of obtaining work experience, their combinations and sequences, and their consequences for youth from different backgrounds. That is, some youth may go through adolescence with little or no paid or unpaid work experience; others may start off with volunteer jobs and then transition to paid work; a diminishing number will spend much of their adolescence in paid employment. What are the benefits, costs, and tradeoffs between these different strategies, and do these consequences differ for different types of youth? Highly advantaged teens might shift their activities toward more involvement in school clubs, sports, music, and other extracurricular activities, in comparison to previous generations of more affluent youth, with many positive outcomes for their development. For such youth, the lack of employment may have little observable cost, given their (usually) positive working role models at home and (usually) strong achievement orientations. The absence of paid work may have more adverse consequences for disadvantaged youth, who may be less motivated to undertake such alternative extracurricular pursuits, and may have fewer opportunities to do so. Some disadvantaged teens, like their counterparts in earlier eras, may become highly involved in family work, caring for younger siblings and performing household chores. For others, however, the absence of paid work may simply lead to more discretionary, unstructured time, and increase the attractiveness of illegal routes to monetary gain.

### **Future Direction 4. Thinking About Work and School in Tandem Rather Than School and Work in a Causal Sequence**

Theoretical models of the school-to-work transition often conceptualize it as a linear transition from school completion to work acquisition. As evident from decades of research, however, this transition is not so simple. As the

transition to adulthood has become prolonged and individualized (Shanahan, 2000), youth combine school and work for long periods of time. After high school, most youth in the United States enter some form of postsecondary education, usually combining their schooling with at least some paid work. Others leave school entirely and attempt to find paid work, only to return to school later seeking further educational credentials, again undertaking various combinations of school and work. As we have pointed out, researchers have given a great deal of attention to the educational costs of paid employment—whether working diminishes school performance or eventual educational attainment. We in the field need to know more about the diverse patterns of schooling and working while adolescents are still in high school as well as longer-term combinations of school and work after they embark on postsecondary education and work careers. We noted earlier that patterns of schooling and working established during high school tend to continue thereafter (Staff & Mortimer, 2007). For some youth this movement back and forth, even if punctuated by spells of “idleness” (involving neither activity), may be considered progressive and purposeful, fostering vocational development and educational attainment; for other youth the long transitional period may simply lengthen experiences of “floundering,” engendering little in the way of successful outcomes. Research on the patterns of schooling and working over a longer period of time, extending studies of “teenage employment,” may yield significant dividends in understanding the precursors of successful and unsuccessful outcomes (Vuolo, Mortimer, & Staff, 2014), including postsecondary educational degrees, income attainment (Staff & Mortimer, 2012), and the acquisition of high-quality adult work experiences.

It is important to recognize that structural variations in the school-to-work transition have important implications for the nature and consequences of adolescent work. In countries that utilize a dual system that combines part-time work experience with regular schooling (such as Germany, Austria, Denmark, and Switzerland), adolescents have available to them integrated educational and job training sequences, which lead directly to adult careers (Mortimer & Krueger, 2000). The institutionalized bridge from school to work makes it unnecessary for teenagers to construct their own work patterns, carving out their own combinations of school and work investments, as is the case in countries that place limited emphasis on vocational education in the secondary school system. In the United States, with a decentralized school system and only general educational credentials to rely on, many employers place

a premium on prior work experience, which youth must find for themselves. As a result, adolescents’ employment is entirely separate from their schooling, often viewed as deterring their educational progress, and seen as having little connection to their long-term occupations. Thus, teenagers in both contexts may work during adolescence, but their employment has very different meaning for the school-to-work transition and for the ensuing adult occupational career.

There is evidence, however, that such differences across countries may be narrowing. Mills and Blossfeld (2005) argued that recent structural changes have altered the transition from school to work in European countries, bringing more uncertainty about labor market placement, even when educational systems have high vocational specificity. Skrobanek, Reissig, and Gaupp (2009) showed that these structural processes have severely affected the German apprenticeship system and its usual ability to offer a quick integration into the labor market, diminishing opportunities for those with lower qualifications. A process of destandardization of the school-to-work transition is taking place, transforming the dual system into a multifaceted transitional system. These studies argue that, although the trends are still not very clear, important changes are under way and are going to transform the transition from school to work in highly stratified and vocationally specific systems.

In developing economies, researchers need to continue to examine the benefits and costs of paid and unpaid work as child labor diminishes, primary schooling becomes universal, and secondary schooling expands. An intriguing question is, as the worst forms of “child labor” are eliminated, whether “child work” will increasingly be substituted, offering a variety of work-related experiences that enable youth to develop a sense of competence, independence, and self-determination. With educational expansion, educational policy-makers have available to them alternative models of school-to-work transition from the developed world. Given favorable market conditions, youth in the developing world may increasingly combine schooling and working for long periods of time, like youth (especially in prior generations) in the United States. Alternatively, if such structural arrangements are constructed for them, they may, like their counterparts in Western European countries (such as Germany, Denmark, and Switzerland), enter a “dual system” of coordinated education and apprenticeship placements. Or, as child labor is eliminated, youth may increasingly move from school to work in a more distinct, sequential fashion.



Researchers need continued monitoring of the shifts from predominant “child labor” regimes to these various alternative forms, including their benefits and costs for different youth (rural and urban; affluent, middle-class, and poor) in distinct cultural environments.

## CONCLUSION

It is very difficult to understand children at work without considering how they got there, why they work, the nature of their work experiences, and how work fits into their current lives and long-term goals. Even when we limit our questions to one group (high school students in the contemporary United States), one dimension of paid employment (average hours of employment during the school year), and one outcome (grade point average), the evidence is mixed on whether and how work impacts school performance. Obviously, more research in both the developed and developing world will foster a better understanding of the complex interrelations between paid work, other types of work, and social development during the lengthening transition to adulthood.

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## CHAPTER 10

# Children and Digital Media

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## OVERVIEW

Twenty-first-century environments are digital. Media become integrated into U.S. children's lives soon after birth, and media provide an ongoing backdrop for everyday living throughout development (Calvert & Valkenburg, 2013). Children use media in their homes, as they walk down the street, in restaurants, in planes, trains, and automobiles, in gyms, and even in schools except when the use of media is explicitly banned.

Media are integrated into children's everyday environments for two main reasons: because children choose to use them, known as *foreground* or *active exposure*, and because others are using media and children are inadvertently exposed, known as *background* or *passive exposure* (Huston, Wright, Rice, Kerkman, & St. Peters, 1990). Media experiences are beloved by many children, with entertainment and friends at their fingertips, making media a preferred foreground experience chosen by virtually all of them. They use media for many purposes, including observational learning of how to interact with others, social interactions with others through interfaces such as mobile phones, the Internet, and electronic gaming, or just to sit back and relax as they become immersed in the stories of others through televised programs, DVDs, and films. Media are informal teachers, providing a platform for children to explore and learn about a wide range of content, including educational lessons, violent behavior, and how to be a sexual person.

Media are also distractors, interrupting daily activities, disrupting concentration, and providing a constant stream of stimulation that is at times voluntarily chosen, and at times not. When involuntary exposure occurs, background media can be harmful to developmental outcomes (American Academy of Pediatrics, 2011). Foreground media exposure can also be harmful, such as children selecting violent television programs for viewing (Wilson, 2008).

This chapter explores media in its many forms, how it has evolved and is evolving, how media influence children's development, and how children influence media in its newer forms. The chapter begins with a discussion of the key theoretical perspectives from the disciplines of psychology and communications that have been brought to bear on media effects. Social cognitive theory and parasocial relationships frame the social relationships that influence children's behavior and learning through role models as well as through friendships that children develop with media characters (Bandura, 1986, 1997; Hoffner, 2008). Cognitive models that use scripts, schemas,

and stages are used to explain age-related differences in story comprehension as well as how the same cohort takes away entirely different media messages because of schematic processing (Calvert & Huston, 1987). The cultivation hypothesis examines how the kind of content available to children influences their beliefs about the world in which they live (Gerbner, 1972). Uses and gratification theory addresses why children view and use media: In the United States, it is mainly to fulfill their need for entertainment (Rubin, 2002). Arousal theory is considered in relation to aggressive and sexual content, in which desensitization dulls responses to real-life experiences (Zillmann, 1991). Psychoanalytic theory is used to discuss aggression, sexuality, and the development of identity (Erikson, 1963; Hall, 1999). Learning models emphasize reinforcement contingencies and classical conditioning principles (Miller, 2009).

The history of media is then considered. Although newer interactive media are rapidly entering children's lives, the colonization of children's leisure time through television viewing continues to play the dominant role in their daily experiences (Wartella & Robb, 2008). The vast penetration of electronic media into children's homes is the next topic, focusing on access to technology as well as use and exposure patterns, with the latter taking into account multitasking and the use of mobile technologies (Rideout, Foehr, & Roberts, 2010). Media diets and foreground and background exposure are considered.

The media environments of children are then discussed, initially focusing on content when available, then turning to evidence of effects on children and youth. The first focus is on the disappearance of quiet environments, as media have become an ever-present aspect of children's lives. The effects of noisy environments are considered in terms of declines in imaginative activities and creativity, disrupted sleeping patterns, and distractions that occur when multitasking. However, there are important exceptions to these negative influences. A media diet of prosocial television programming, for instance, can lead to enhanced imaginative play for young children, as well as higher levels of creativity when children become adolescents (D. R. Anderson, Huston, Schmitt, Linebarger, & Wright, 2001). Then the social nature of media environments is examined, including prosocial media and role models, parasocial relationships that children develop with media characters, and online social relationships that children engage in through social networks.

The mean and scary world follows, with descriptions of how media violence has aroused, desensitized, and

influenced the cognitive scripts and behaviors of children and adolescents in observational as well as interactive media. This scary media world is not just about violent content, but where children experience the supernatural, either by choice or by accident. The gendered world of media is discussed, which is a world that is still dominated by heterosexual European American men who are strong and powerful, supported by emotional women who define themselves by their physical appearance and are less often visible onscreen (Hust & Brown, 2008). Online experiences also provide opportunities for youth to express who they are, and they do so, often in sexual ways during the adolescent years when sexuality is becoming a key aspect of how youth define themselves (Subrahmanyam, Smahel, & Greenfield, 2006). Efforts to reduce youth exposure to sexually explicit online content are considered (Thornburgh & Lin, 2002), which have been complicated by peer-to-peer file sharing such as sexting, in which youth send nude or semi-nude pictures to one another (Lenhart, 2009).

The marketing of energy-dense, high-caloric foods to children is addressed in relation to the surge in the pediatric obesity rate (Institute of Medicine [IOM], 2006). The social marketing of healthier products to children, in part through popular media characters, is considered as one option to reduce the obesity crisis, as are interactive media, such as sensors that track energy expenditure and exergames that require gross motor movement for play (Calvert, Bond, & Staiano, 2014). Exposure to media portrayals of alcohol, tobacco, and drug influences on children's behavior is considered, particularly when attractive role models engage in these behaviors (Roberts & Christenson, 2000). Social policies are then addressed.

Conclusions are drawn about children's lives in the 21st century, where they are digital natives (Prensky, 2001), but soon will be displaced by the next generation of children whose lives will be embedded in the next generation of media. In the media area more so than any other, the only constant is rapid change.

## **THEORETICAL PERSPECTIVES ON MEDIA USE AND EFFECTS**

The study of children's media is multidisciplinary and interdisciplinary, spanning diverse fields including child psychology, child development, communications, health, medicine, and public policy. This diversity occurs, in part, because of the pervasive influence of media content and

media experiences on a broad range of topics and developmental outcomes. For this reason, the theories brought to bear on understanding the impact of media on children's development employ a range of different approaches. Theories of development that are grounded in psychology and theories of communication are the key approaches that have been used to describe and examine the influences of media on children and adolescents. Some of these theories, such as communication theories, psychoanalytic theory, and behaviorism, are less often used in contemporary developmental science, but they are useful for addressing core issues that are germane to the media area.

### **Social Cognitive Theory**

Social cognitive theory has played a central role in explicating the role of media on children's behavior (Bandura, 1986, 1997). Children learn behaviors through processes of observational learning, and later translate some of those actions into their own behavioral repertoire if there are sufficient motivational incentives to do so. The subprocesses of social cognitive theory involve attention to information, retention of that information through encoding and representational processes, production of that behavior, and motivation to do so which involves perceptions of rewards or punishments for acting on what one has observed. Self-efficacy, the perception that one can control the events around one, influences whether or not observers will act on an event that they have seen (Bandura, 1997).

Role models are central to Bandura's theoretical approach, with children who identify with certain media characters becoming more likely to imitate their actions. When undesirable behaviors are not punished or are even rewarded, disinhibition can occur, making it more likely that children will imitate antisocial behaviors (Bandura, 1986). Response facilitation occurs when children observe and then imitate models perform socially constructive, prosocial behaviors, some of which have previously been low in frequency (Bandura, 1986). Social cognitive theory is content neutral in predictions, and has been used to explain why and how children imitate a range of behaviors, including aggressive behavior, prosocial actions, gender-stereotypical or gender-counterstereotypical behaviors, and health-related behaviors.

### **Parasocial Relationships and Parasocial Interactions**

In the field of communications, parasocial relationships and parasocial interactions describe the kinds of



social experiences that children perceive that they have with media characters. Parasocial interactions originally described adults' relationships with televised newscasters who looked directly into the camera lens and spoke to the audience as if they were having a conversation (Horton & Wohl, 1956). Through these experiences, viewers came to trust certain newscasters and acted like they had a personal relationship with them (Horton & Wohl, 1956). Parasocial interaction and parasocial relationship were once considered the same phenomenon. Parasocial relationships now describe ongoing personal bonds with favorite characters, but parasocial interactions can take place one time (Schramm & Hartmann, 2008).

With a few notable exceptions (see Hoffner, 1996, 2008), research has examined adults' parasocial interactions and relationships with media characters rather than children's parasocial relationships and interactions. However, parasocial interaction techniques are often used in children's media with characters who directly address the child audience through the camera lens, talk to the child and pause for a reply, and then act as if they heard what the child said (Lauricella, Gola, & Calvert, 2011). In essence, characters act as if they are in an interaction with children in the viewing audience, and children, in turn, often reply to the characters through their own actions and words (D. R. Anderson et al., 2000), with those who respond to characters demonstrating better plot comprehension (Calvert, Strong, Jacobs, & Conger, 2007). Children also have favorite characters (Hoffner, 1996), and these personal relationships with media characters may indicate a parasocial relationship, which also predicts their learning (Calvert & Richards, 2014).

### Cognitive Approaches

Children's programs are presented through story or magazine formats (J. C. Wright et al., 1984). Mature plot comprehension involves separating the central, plot-relevant from the incidental, irrelevant program content, ordering the central content into a story scheme, and drawing inferences about characters' motives and integrating the cause-event sequences that organize the story (W. A. Collins, Wellman, Keniston, & Westby, 1978). Prior to Ages 9 and 10, children have difficulty in understanding implicit program information, such as character motives and feelings (W. A. Collins et al., 1978).

Because children must understand motives and intent to comprehend television stories (W. A. Collins et al.,

1978) and advertisements (Calvert, 2008a), cognitive theories are often used to examine the impact of media on children's learning and social behavior. The theories of Piaget (1954), Vygotsky (1962, 1978), and various information-processing approaches have been used to examine children's comprehension of televised narratives, their social behavior, and their comprehension of commercial intent (i.e., that advertisements are designed to persuade consumers to buy products), which is often blurred by marketing practices (Calvert, 2008a; Kunkel & Castonguay, 2012).

The visual and verbal ways that content is presented can be linked to developmental differences in how children think in iconic or symbolic modes (Calvert, 2005). Modes of thought have been used to understand plot comprehension, as are scaffolds provided by parents or other adults, such as teachers, to help children reach just beyond their current level of comprehension to advance their understanding of program-related content (Vygotsky, 1962, 1978). Cognitive developmental approaches have also been used to understand gender constancy in relation to children's selective attention and memory of program-related material (e.g., Luecke-Aleksa, Anderson, Collins, & Schmitt, 1995). In information-processing theory, viewers' schemas guide children's selective attention and understanding of content.

### The Cultivation Hypothesis

Because content influences the impact that media has on children and adolescents, content analyses, in which the kind of onscreen information is analyzed, have been conducted in numerous areas, including media aggression, prosocial behavior, gender-stereotyped behaviors, health-related behaviors, and sexuality (Calvert & Wilson, 2008). Gerbner (1972) argued that media content depicts the power structure and symbolic relationships among people in a social system, as reflected in his Violence Index that tracked the amount of violent content in television programs. For instance, female characters, particularly women of color, are often symbolically annihilated on television, appearing much less frequently than male characters do, which reflects their trivialization and lack of power in U.S. culture (Tuchman, 1979).

In Gerbner's cultivation hypothesis, media exposure can promote certain beliefs and expectations. For instance, repeated exposure to violent content can lead to *mainstreaming*, which leads to the construction of a shared

vision of reality as a violent place because so much of the content is violent (Gerbner, Gross, Morgan, & Signorielli, 1994). Exposure to content can also *resonate* with viewers' own experiences if what they view is consistent with something that has happened to them (e.g., being mugged in real life could resonate with seeing depictions of muggings onscreen; Gerbner et al., 1994). The Internet allows underrepresented youth to create their own shared realities, as when sexual minorities present themselves and find support from others through blogs in the form of online personal diaries (Huffaker & Calvert, 2005).

### Uses and Gratification Theory

Uses and gratification theory explains why we use media. In this approach, children select certain media content and experiences (the uses) to fulfill certain emotional and social needs (the gratifications; Rubin, 1994). Three main motivations to use media have emerged: for diversion and escape, for personal identity construction or social utility (such as strengthening contact with others), and to gain information, such as social information about others (Rubin, 2002). Selective exposure to media, then, depends on the needs of the users.

### Arousal Theory

Arousal theory involves physiological responses in relation to real or imagined events (Calvert, 1999). Autonomic arousal, the typical focus in media studies of emotion, has been measured physiologically with heart rate and skin conductance (Zillmann, 1982) as well as by facial expressions (Cantor & Hoffner, 1990). With increased exposure, habituation occurs and desensitization takes place. As a consequence, the content must become more extreme to create the original arousal level, although arousal can return to its former level after sufficient time passes and disinhabituation occurs (Zillmann, 1982). Arousal has no predetermined direction for outlets, instead being triggered by immediate environmental influences (Zillmann, 1982).

Arousal theory can also be linked to uses and gratification theory and to children's selective exposure decisions. That is, media can be used to regulate arousal levels. Those who are bored may search for content that stimulates them, whereas those who are anxious may search for content that relaxes them. For instance, children can regulate their own arousal levels by choosing whether or not to view scary and aggressive content.

### Psychoanalytic Theory

Freud proposed that humans are by nature aggressive and sexual, which represents the destructive and libido instincts, respectively (Hall, 1999). To release pent up drives, energy is released through various mechanisms, such as catharsis, in which a fantasy experience can substitute for a real experience (Hall, 1999). Theoretically, viewing or playing with aggressive content can drain off aggressive impulses in a way that is not harmful to others. When studying media, most social scientists have used Freud's approach to psychoanalytic theory.

Within psychoanalytic theory, an overlooked variation of Freud's ideas is Jung's articulation of archetypes as an explanation for interest in media portrayals, such as violence. Archetypes are prototypical experiences of humans represented in media by symbols such as the hero, the villain, the wise old man, the mother, the father, the child, the shadow (generally representing the dark side of human nature), the sun, and a wolf howling at the moon (Hall & Nordby, 1999). When applied to media, the archetype of the hero represents the fight for good over evil against the villain, including the hero's struggle to stay just when engaging in behaviors that can take a person to the dark side of the emotions, such as feelings of anger and revenge (Calvert, Kondla, Ertel, & Meisel, 2001).

Another variation of psychoanalytic theory developed by Erikson (1963) adds psychosocial to psychosexual stages. Identity formation is central to this paradigm, as are other developmental tasks experienced by children at different points in their development (Erikson, 1963). Online experiences can be a resource for youth to construct their identities (Calvert, 2002; Subrahmanyam et al., 2006).

### Behaviorism and Classical Conditioning

Although not used as much in contemporary developmental research, media influences continue to examine rewards and punishments. That which is reinforced tends to recur, and behaviors that are punished tend to decrease. The mere exposure effect, based on classical conditioning principles, is an example of how repeatedly exposing viewers to content can lead to positive feelings about it (Auty & Lewis, 2004). Marketing often uses behavioral conditioning principles by, for example, pairing branded media characters with foods or by placing products (i.e., product placement) in films or electronic games that they want children to purchase and consume (Auty & Lewis, 2004; Calvert, 2008a). The consumer, in this instance,

is being exposed to a subliminal message, and hence, may select that food because of associations with positive experiences, such as playing a game (Calvert, 2008a).

### Summary

Theories based in psychology and in communications have been used to explain why children use media, how they learn from media, and how they feel and act after media exposure. In cognitive theories, such as those put forth in schema theories and cognitive developmental theories, cognition organizes experience and behaviors (Huston, 1983). By contrast, in theories that come from a learning tradition, such as behaviorism and social cognitive theory, behavior occurs mainly due to reinforcement contingencies in the environment (Huston, 1983). Bandura (1986, 1997) did include cognitive mechanisms in his approach, including attention, retention, and self efficacy, but developmental changes in thought, such as those advanced by Piaget (1954), are absent from his approach. Parasocial relationships and parasocial interactions expand Bandura's ideas to social relationships with media characters as perceived friends, not just as role models (Calvert & Richards, 2014).

## THE HISTORY AND EVOLUTION OF MEDIA PLATFORMS

From birth onward, children's lives are embedded in a complex web of media that pervade their daily existence (Common Sense Media, 2011, 2013; Rideout et al., 2010). According to Wartella and Robb (2008), extensive electronic media experience marked a major change in the lives of children over the past century. In 1934, adolescents spent an average of *10 hours each week* with media. They now spend *more than 10 hours each day* with media when multitasking is included (Rideout et al., 2010; Wartella & Robb, 2008).

Face-to-face interactions in indoor and outdoor settings were normative at the beginning of the 20th century, with book reading as the main medium available for children to use. The electronic media of films and radio became popular in theaters and homes by the 1930s with radio becoming an option in cars. No environmental media influence, however, has been or has remained as powerful as television, which colonized children's leisure time as it entered children's homes during the 1950s (Wartella & Robb, 2008).

Television has been conceptualized as the electronic hearth of the home (Tichi, 1991), with parents and their children originally viewing together in their family or living rooms because they only had one television set. After World War II, recreational media moved from the public space of theaters to television sets inside the home, with penetration rates reaching 66% of U.S. homes between 1948 and 1955, and almost 90% by 1960 (Spigel, 1992). The popularity of viewing television programs has not diminished, even as newer interactive media appeared (Rideout et al., 2010), but children now view television programs online as well as on traditional television screens (Rideout et al., 2010).

Electronic video games became popular in the 1970s with personal computers becoming a common feature in homes during the 1980s. Children initially played video games on consoles and personal computers that were rather large, with later devices becoming smaller with options such as Gameboys. As the Internet moved into homes in the 1980s and 1990s, online experiences became an increasingly common activity for youth (Pempek, Yermolayeva, & Calvert, 2009). As the 20th century moved to a close, changes in Internet speed and emerging interfaces such as social networks led to a shift from online interactions with strangers to interactions with friends, particularly for adolescents who as a group tend to be early adopters of newer technologies (Pempek et al., 2009). Gaming became an online experience that continued to include strangers who were linked across the world in competitive experiences, such as massive multiplayer online role playing games (Tarpley, 2012). Sensor-based systems that originally involved hand-held devices, such as the controllers held to play games (Staiano & Calvert, 2011a), can track a person's movement and embed them onscreen as avatars that represent the player without any external device. These trends reflect an electronic hearth that is no longer a one-way experience that can now situate children within onscreen experiences.

The penetration of mobile technologies, such as musical devices, electronic tablets, and mobile phones, allows youth to be connected to media and to move seamlessly across them 24/7. Mobile technologies are a gateway to a vast array of information. With the computer as the hub of the wheel, the media environments of children are now integrated, providing multiple functions to youth as they use their mobile phones to listen to music, text or call one another, watch an online television program or film, or play an online game or mobile app.

Underlying this playful online experience is a business that is directed at profit making, which places children in a highly sophisticated commercial culture throughout their lives (Montgomery, 2012). Tracking software follows many of the keystrokes and activities of users, leading to a vast and detailed knowledge base for marketers to influence consumer attitudes and behaviors, which raises serious privacy issues (Montgomery, 2012).

Although the technologies are changing quickly, the developmental needs of children, such as friendship creation, identity formation, and emotional regulation, have remained constant (Calvert & Wartella, 2014). Indeed, children use media as a space in which they acquire information that addresses developmental needs, such as their sexual identity (Subrahmanyam et al., 2006). Developmental and communication theories which could account for media effects emerged and advanced during the same time frame that media were evolving, lending themselves to ongoing inquiries about how media influences children.

## THE ECOLOGY OF THE DIGITAL WORLD

Children's worlds are increasingly electronic and digital where information is accessed, delivered, and distributed by screen media rather than by traditional hard or soft cover books. Presumably, the impact of media depends on media access and exposure. Access is relatively straightforward: A child or the family has the technology, and children can use it. But what exactly is media exposure? Definitional and measurement issues create challenges in answering the latter question.

### Media Access

Numerous surveys have taken place in the United States over the past two decades to measure media access. These include Kaiser Family Foundation surveys with nationally representative samples conducted on 8- to 18-year-olds, which were published in 1999, 2005, and 2010, as well as younger children who were 0 to 6, published in 2003 and 2006, and then followed up on by Common Sense Media in 2011 and 2013.

The 2013 survey of U.S. parents of 0- to 8-year-olds ( $N = 1,463$ ) by Common Sense Media documented the extensive penetration of screen media in young children's homes. As seen in Table 10.1, 96% of these children's homes had a television set, 76% had a computer (69%

**TABLE 10.1 Media Present in 0- to 8-Year-Old U.S. Children's Homes**

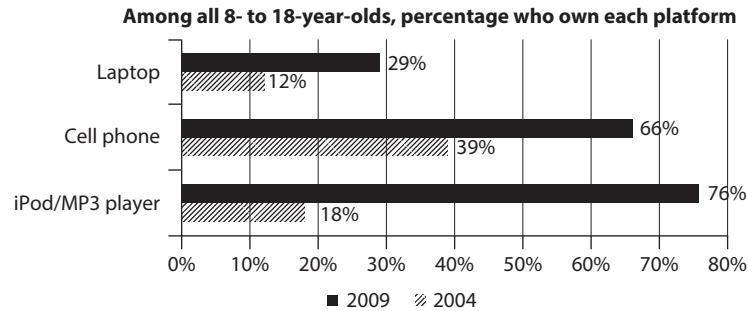
	Among all children 0 to 8, percentage with each item in the home
TV	96%
Cable or satellite TV	70%
DVD player	78%
DVR	28%
Computer	76%
High-speed Internet	69%
Video game console	63%
Handheld video game player	35%
Smartphone	63%
Video iPod or similar device	27%
Kindle, Nook, or similar e-reader	21%
iPad or similar tablet device	40%

Source: Common Sense Media (2013), a nonpartisan nonprofit organization ([www.commonsense.org](http://www.commonsense.org)).

of which had high-speed Internet access), and 63% had a video game player. Television sets often had cable or satellite access, a DVD player, or a digital video recorder. Thirty-six percent of these children had their own television set in their bedrooms, 22% had a DVD or VCR player, 9% had a video game player, and 3% had a computer. A major change in access to mobile devices occurred in children's homes between 2011 and 2013. Overall, young children's mobile media access doubled from 2011 to 2013, and mobile media use tripled for young children during that time frame. In 2013, smartphones were available in 63% of homes compared to 41% in 2011, e-readers (like the Kindle and Nook) were found in 21% of homes compared to just 9% in 2011, and tablets (such as iPads) were found in 40% of homes compared to just 8% in 2011. Seven percent of 0- to 8-year-olds had their own tablet in 2013. Consistent with these findings, Wartella, Rideout, Lauricella, and Connell (2013) found that mobile devices were becoming prevalent in a nationally representative sample of low-income families with children under the age of 8 during 2012; specifically, 55% of these families had smartphones, though only 18% had tablets.

For U.S. children who were ages 8 to 18, the penetration rates of media in children's homes, particularly interactive and mobile media, were much higher than those of younger children. In a survey of 8- to 18-year-old U.S. children ( $N = 2,002$ ) conducted by Rideout et al. (2010), 99% of these children lived in homes with a television set (84% with cable or satellite options). The typical U.S. home for older children had 3.8 television sets, 2.8 DVD or VCR players, 1 digital video recording device, 2.3 video game





**Figure 10.1** Increases in mobile media access over time.

Source: *The Media Family: Electronic Media in the Lives of Infants, Toddlers, Preschoolers and Their Parents*, by V. Rideout, U. Foehr, and D. Roberts, 2010, Menlo Park, CA: Kaiser Family Foundation. Reprinted with permission.

consoles, 2.5 radios, 2.2 CD players, and 2 computers. With few exceptions, more and more media entered 8- to 18-year-old U.S. children's bedrooms between 1999 and 2010, which enabled youth to exercise considerable control over their own media preferences and media exposure.

Mobile phones are mini computers, linking children to communication options as well as virtually any kind of information throughout the Internet, anytime and anywhere that the signal will travel uninterrupted. As seen in Figure 10.1, a major increase occurred from 2005 and 2010 in youth access to mobile media, including iPod/MP3 players, mobile phones, and laptops. Mobile phones became increasingly popular for all age groups, with older children owning these devices more than younger ones. Portable CD/tape players declined over time, perhaps because iPods and MP3 became music players, and music has again migrated, now to smartphones.

### Defining Media Exposure

Children's exposure to video content includes a mixture of foreground and background content. Just because a television set is "on" does not mean that children are paying attention to the content. In fact, very little relation was found in homes between children looking at a screen and being in the room with an operating television set, in part because exposure was occurring in the backdrop of family activities, such as playing or even sleeping (D. R. Anderson, Field, Collins, Lorch, & Nathan, 1985).

For foreground exposure, eyes on screen may be the most valid measure. Even so, one can be looking at a screen and not really paying attention (Calvert, 1999). Doing another activity during viewing may also indicate that television viewing is a foreground or a background activity, as children may still be responsive to the audio

track in both instances. That is, they may intentionally look back at the screen when they think that something interesting is about to happen, or they may automatically look back at the screen when a primitive attentional orienting response is elicited, such as a loud onscreen noise (Calvert, Huston, Watkins, & Wright, 1982). Foreground exposure is more likely to be age-appropriate than is background exposure, but background exposure also affects developmental outcomes (D. R. Anderson & Pempek, 2005). For instance, background media exposure disrupts children's play, a contributor to early cognitive development (Schmidt, Pempek, Kirkorian, Lund, & Anderson, 2008).

A *media diet*, consisting of the overall amount (quantity) and the kind of exposure (quality), is another consideration in defining media exposure (D. R. Anderson & Hansen, 2009). The quantity of media exposure can be correlated with certain developmental outcomes simply because that kind of content is more available. For instance, most television programs contain violent content (Wilson, 2008), and hence overall television exposure may be correlated with aggressive outcomes. The kind of media exposure, such as exposure to aggressive or prosocial material, is useful for assessing specific media effects (D. R. Anderson et al., 2001).

Exposure is somewhat easier to assess for interactive than for observational media because children are typically doing some kind of physical behavior, such as touching the screen or moving content around. However, trends for multitasking that emerged in the Kaiser Family Foundation (Rideout et al., 2010; Roberts, Foehr, & Rideout, 2005) data for 8- to 18-year-olds as well as in the Common Sense Media (2011) data for 0- to 8-year-old children added yet another layer of difficulty to defining media exposure. When they are multitasking, youth may have a primary and a secondary media activity, such as writing a blog

and listening to music. This kind of exposure is not unlike foreground and background exposure to television or other kinds of video content. *Total media use* was defined by how much time was spent with media, whereas *total media exposure* added extra time to that total when more than one medium was used simultaneously due to multitasking (Roberts et al., 2005).

### Measuring Media Use and Exposure

Seven main methodological approaches have been used to measure media use and exposure (D. R. Anderson & Hanson, 2009; Vandewater & Lee, 2009). *Global time estimates* ask parents, children, or both to estimate overall exposure to various media (e.g., “How many hours did you (or your child) watch television yesterday?”). Diaries include *time-use diaries*, such as the Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID), which asks parents of younger children or older children themselves to track and write down all of their media experiences over a period of time (Vandewater & Lee, 2009). *Media diaries* use various approaches such as having parents write down the specific television program a child is viewing in say, 15-minute intervals (e.g., D. R. Anderson et al., 1985). *Direct observations* of behaviors using video equipment are another option, but the cost is prohibitive (D. R. Anderson et al., 1985). *In experience sampling*, youth can carry an electronic device and be randomly contacted at periodic intervals to inquire about what they are doing at that specific moment, but it disrupts participants’ ongoing behaviors (Csikszentmihalyi & Kubey, 1981). *Electronic monitors*, such as the Nielsen People Meter, can track who is viewing a specific television program although this kind of methodology is invasive. Similarly, *tracking software* is very accurate and can identify exactly where specific users have gone online (Vandewater & Lee, 2009), but privacy issues are raised (Thornburgh & Lin, 2002).

Although diaries are one of the most accurate measures (D. R. Anderson et al., 1985), the cost effectiveness of global time estimates have made them a method of choice. Indeed, the most comprehensive data on U.S. children’s media use and exposure patterns over the past decade have come from nationally representative cross-sectional surveys using global time estimates initially conducted by the Kaiser Family Foundation (Rideout et al., 2010; Rideout & Hamel, 2006; Rideout, Vandewater, & Wartella, 2003; Roberts et al., 2005; Roberts, Foehr, Rideout, & Brodie, 1999) and now Common Sense Media (2011, 2013). These

surveys examined three different cohorts broken into two different age groups: 0- to 6-year-olds (and later 0- to 8-year-olds), and 8- to 18-year-olds. Because these are major sources of ongoing information about children and youth media use and exposure patterns, this age breakout and their survey measure will be used to organize the area of media use and exposure patterns.

### Media Use for 0- to 8-Year-Old Children

In the 2013 Common Sense Media survey of 0- to 8-year-old U.S. children’s media use patterns, children spent 2 hours, 43 minutes on a typical day with screen media, music, and reading. Exposure to screen media far surpassed music and reading exposure. Specifically, children spent 1 hour, 55 minutes per day using some kind of screen media, but only 28 minutes reading or being read to, and 20 minutes listening to music. Within screen media, watching television and DVDs dominated young children’s time, with interactive media use lagging behind.

When age comparisons were conducted, developmental differences were found for exposure to screen media. As seen in Table 10.2, infants spent an average of about one hour with screen media each day, which increased to just

**TABLE 10.2 Average Amount of Time Spent With Media by Age Among 0- to 8-Year-Old U.S. Children on a Typical Day**

	Total	0–1	2–4	5–8
<b>Watching TV, DVDs, or videos</b>	1:27	:56	1:38	1:32
TV on a TV set	:57	:44 <sup>a</sup>	1:04 <sup>b</sup>	:58 <sup>a,b</sup>
DVDs	:22	:11 <sup>a</sup>	:26 <sup>b</sup>	:25 <sup>b</sup>
TV/videos on a computer	:03	* <sup>a</sup>	:02 <sup>a,b</sup>	:04 <sup>b</sup>
TV/videos on a mobile device	:05	:01 <sup>a</sup>	:06 <sup>b</sup>	:05 <sup>a,b</sup>
<b>Reading/being read to</b>	:28	:19 <sup>a</sup>	:29 <sup>a,b</sup>	:32 <sup>b</sup>
<b>Listening to music</b>	:20	:34 <sup>a</sup>	:18 <sup>b</sup>	:15 <sup>b</sup>
<b>Playing media games</b>	:23	:01	:14	:41
Console video games	:06	* <sup>a</sup>	:02 <sup>b</sup>	:12 <sup>c</sup>
Computer games	:05	* <sup>a</sup>	:03 <sup>b</sup>	:09 <sup>c</sup>
Handheld game player	:04	:00 <sup>a</sup>	:02 <sup>a</sup>	:08 <sup>b</sup>
Playing games on a mobile device	:08	:01 <sup>a</sup>	:07 <sup>b</sup>	:12 <sup>a,b</sup>
<b>Other computer activities</b>	:03	:01	:03	:05
Educational software	:02	:01	:03	:02
Homework	:01	:00 <sup>a</sup>	:00 <sup>a</sup>	:02 <sup>b</sup>
Anything else on a computer	*	*	*	:01
<b>Using other apps on a mobile device</b>	:02	*	:03	:03
<b>TOTAL SCREEN MEDIA TIME</b>	1:55	:58	1:58	2:21
<b>TOTAL MEDIA TIME</b>	2:43	1:51	2:45	3:08

*Note.* Statistical significance at  $p < .05$  is denoted through different letter superscripts. Significance should be read across rows, but is not denoted for summary scores.

*Source:* Common Sense Media (2013), a nonpartisan nonprofit organization ([www.commonsense.org](http://www.commonsense.org)).

under 2 hours daily for 2- to 4-year-olds, and almost 2½ hours daily for 5- to 8-year-olds. Reading or being read to also increased significantly from the first year of life to Ages 5 to 8 ( $M = 19$  minutes versus 32 minutes, respectively); those who were Ages 2 to 4 ( $M = 29$  minutes) were not significantly different from the younger or the older age groups. Notice that the overall amount of screen time is higher than time spent reading at all ages, even though the early years are important for the development of language and reading skills. The one area of media exposure that decreased significantly after Age 1 was listening to music.

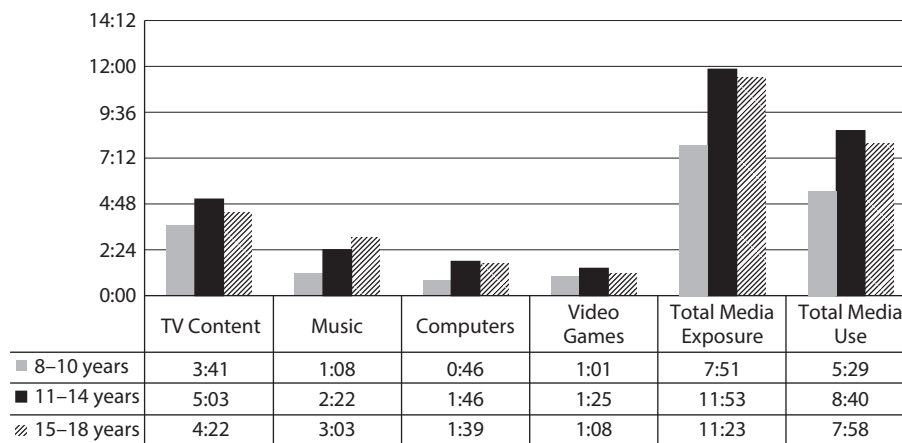
The Common Sense Media (2011) survey also found that parents reported that 16% of 0- to 8-year-olds were multitasking some or most of the time, with the highest rates for 5- to 8-year-old children, 23% of whom multitasked some or most of the time. Approximately twice as many African American (22%) and Latino/a American (21%) than European American (11%) 0- to 8-year-old children multitasked some or most of the time.

Earlier reports from the Kaiser Family Foundation (Rideout et al., 2003; Rideout & Hamel, 2006) found that parents generally had favorable beliefs about the *kind* of media content that their young children used. For instance, 66% of parents reported that they had observed their young children imitating prosocial behaviors, particularly after viewing children's educational television programs. By contrast, only 23% of parents observed their young children imitating aggressive behavior, which was reported more for sons than daughters. Older children imitated content more than younger children did.

Parents also perceived different media differently. In particular, Rideout and Hamel (2006) found that 69% of parents believed that computers helped their children, and 38% of parents viewed television favorably, but only 17% perceived video games favorably. By contrast, only 8% of parents thought that computers hurt their young children compared to 31% who viewed television negatively, and 49% who perceived video games negatively. These differences in attitudes toward technologies may well signify content as well as interactivity differences that their children are experiencing when using these media (Calvert, 2006).

### Media Use and Exposure for 8- to 18-Year-Old Children

For youth who were 8 to 18 years of age, the daily *total media use* averaged 7 hours, 38 minutes (Rideout et al., 2010), more than double that of younger children. When the time spent multitasking was considered separately, *total media exposure* escalated to an average of 10 hours, 45 minutes for older children. Television viewing was by far the most used medium, followed by music, and video games, with print and film being the least used media. Although mobile phone use was an emerging trend, only listening to music, playing games, or watching videos was counted toward media exposure to keep the 2010 report consistent with prior reports. That left out texting and talking on mobile phones as part of the media exposure total, which is a major omission given that 8- to 18-year-olds spent an average of 1 hour, 35 minutes per day texting, and an additional 33 minutes per day talking on mobile phones (Rideout et al., 2010).



**Figure 10.2** Media use and exposure by age.

Source: *The Media Family: Electronic Media in the Lives of Infants, Toddlers, Preschoolers and Their Parents*, by V. Rideout, U. Foehr, and D. Roberts, 2010, Menlo Park, CA: Kaiser Family Foundation. Reprinted with permission.

Age differences in total media exposure during the 2010 media study significantly favored older over younger youth. As seen in Figure 10.2, daily *total media exposure* was about 12 hours daily for 11- to 14-year-olds, 11½ hours for 15- to 18-year-olds, and “only” about 8 hours per day for 8- to 10-year-olds. Note that these figures are *per day*. The *total media use* figures were close to 9 hours per day for 11- to 14-year-olds, about 8 hours per day for 15- to 18-year-olds, and about 5½ hours per day for 8- to 10-year-olds. All age groups spent more time watching television content than any other media activity, though television viewing moved to additional platforms, such as computers and mobile phones. Reading print media was actually more prevalent among younger 8- to 10-year-old children than for 15- to 18-year-old youth, a finding that has striking ramifications for literacy skills in the United States.

In the 2010 media survey, boys’ *total daily media exposure* was about 11 hours per day compared to about 10 hours for girls (Rideout et al., 2010). The gender difference was mainly attributable to boys investing more time in gaming on video game consoles or computers than girls did. Girls, by contrast, spent more time with music, print media, and online social networks than boys did. The 2010 gender differences in exposure to music and playing console video games are consistent with prior 2005 patterns (Roberts et al., 2005). In 2010, however, girls spent almost one hour more texting and talking on mobile phones than boys did, which was not counted in total media exposure time (Rideout et al., 2010). Had these figures been included, there would probably have been no gender difference in overall media exposure in 2010.

During the earlier 2005 media survey, increases in *total media exposure* were fueled mainly by multitasking. The authors speculated that 6½ hours of daily *total media use* was the peak of what was possible (Roberts et al., 2005). The mobile media that entered children’s worlds after that second report, however, proved them to be incorrect, with *total media use* increasing to about 7½ hours per day. As electronic media continued to gain more ground in children’s *total media use*, reading print media lost ground when compared to the earlier survey (Rideout et al., 2010; Roberts et al., 2005).

African American and Latino/a American youth have more media exposure than European American youth. *Total media exposure* was approximately 13 hours per day for African American and Latino/a American youth, but “only” about 8½ hours per day for their European American peers. That is a daily *total media exposure*

increase of almost 4 hours for African American children, about 4¾ hours for Latino/a American children, and about 1½ hours for European American children between 1999 and 2010 (Rideout et al., 2010). Between 2005 and 2010, significant increases were found favoring Latino/a American and African American youth in exposure to music and video game play, and television exposure favoring Latino/a American over African American and European American youth (though African American youth still consumed the most television content at almost 6 hours per day). Ethnic differences in media use patterns were robust, even with numerous statistical controls (Rideout et al., 2010). Differences also appeared in 2010 for using mobile phones to talk, favoring both African American and Latino/a American over European American youth, and in texting, favoring African American over European American youth. By contrast, European American youth read more books than African American or Latino/a American youth did.

Consistent with the Kaiser Family Foundation survey data, diary data from the Panel study of Income Dynamics revealed that African American children spent more time watching television and playing video games than European American or Latino/a American children did. By contrast, European American children viewed more educational television programs than their African American peers, and European American children played more educational computer games than either African American or Latino/a American children (Bickham et al., 2003).

Because electronic media permeated older youths’ homes, their experiences were often oriented around media. In 2009, 64% of youth reported that the television set was typically on during meals and 45% of the time when no one was viewing. Only 26% of U.S. 8- to 18-year-olds reported any rules about the music they listened to, only 30% had any rules about the video games they played, 46% had rules about what *kind of program* they could view on television (as compared to 28% who reported rules about *how much* television content they could view), and 52% had rules about what they could do on a computer (Rideout et al., 2010). Daily total media exposure in homes with no rules was higher (almost 13 hours) than in homes with some media rules (almost 10 hours). Few ethnic differences existed in how much time children were allowed to spend with media, but European American children generally had more rules about content than did their African American or Latino/a American peers did.

Taken together, the data suggest that media provide a backdrop in which most U.S. children develop, much of



which is unregulated by their parents. Ethnic minorities are extremely heavy users of electronic media, outpacing their European American peers in adopting and in using all media except for reading books for pleasure and watching educational television programs. The implication is that European American more so than African American and Latino/a American children live in homes that support educational media, a pattern that reinforces an ongoing digital divide in the quality of home media environments. Television viewing, nonetheless, remains the most common experience for U.S. children of all ages, suggesting an ongoing and sustained interest in watching the lives and the stories of others.

### THE DISAPPEARANCE OF QUIET ENVIRONMENTS

Overall, the picture that emerges from children's media access, usage, and exposure patterns is an environment characterized by considerable noise and potential distractions. This noise comes not just from the media that children and youth select, but also from ambient noise that is part of the everyday environment. This noisy world can disrupt children's play and creativity (Schmidt et al., 2008; Valkenburg & Calvert, 2012), their sleep (Thompson & Christakis, 2005), and their concentration (Christakis, Zimmerman, DiGiuseppe, & McCarty, 2004).

### Media, Imaginative Play, Creativity, and Daydreaming

Imagination contributes to positive developmental outcomes, including higher levels of empathy, perspective taking, happiness, and flexibility (D. G. Singer & Singer, 1990). Imagination can be conceptualized as children's imaginative play (also pretend or fantasy play), creative imagination (i.e., creativity), and fantasies. In imaginative play, children transcend the immediate environment and act "as if" they are experiencing another perceptual reality (van der Voort & Valkenburg, 1994). For instance, a child may engage in role-play activities or pretend to be someone else (James & McCain, 1982). Creative imagination can be defined "as the capacity to generate many different novel or unusual ideas" (Valkenburg & Calvert, 2012, p. 158), or as divergent processing (D. G. Singer & Singer, 2005). Involvement in the arts is one area that is used to measure creative imagination (D. R. Anderson et al., 2001), as are tasks that require the generation of numerous novel responses (Valkenburg & van der Voort, 1994). Daydreaming involves the suspension of physical activity while one

engages in internal, mental fantasies (Valkenburg & van der Voort, 1995).

A quiet environment is a necessary ingredient for creative imagination to develop as it provides a space to think, to reflect, and to pause during and after busy days (D. G. Singer & Singer, 2005). These kinds of spaces are generally inconsistent with television viewing and more readily found when reading books, thereby increasing the probability of disrupting imaginative play and creativity as electronic media exposure increases (D. G. Singer & Singer, 2005). One can also consider a media diet, in which the quantity of exposure is examined separately from the quality of exposure (D. R. Anderson & Hanson, 2009). Thus, exposure to certain kinds of media and media content could cultivate imagination and creativity.

Two overarching hypotheses have been used to examine the role of media in imaginative play, creativity, and fantasy. These are the *stimulation hypothesis*, in which exposure to media is predicted to increase imagination, and the *reduction hypothesis*, in which exposure to media is predicted to disrupt imagination (Valkenburg & van der Voort, 1994; van der Voort & Valkenburg, 1994).

### The Stimulation Hypothesis

In the stimulation hypothesis, media environments provide the raw content that children can subsequently use in their play, their creative tasks, and their internal fantasies (Valkenburg & Calvert, 2012). Most studies on this topic have examined television exposure, which is a limitation of the database, because interactive media are more likely to require children to generate a product than observational media are (Calvert & Valkenburg, 2013). When the quantity of television exposure is examined, the data suggest that children incorporate the content that they view into their fantasy play and their creative products, but the data do not indicate that children are any more imaginative in their play (Shmukler, 1981) or make creative products due to television exposure (e.g., J. L. Singer, Singer, & Rapaczynski, 1984).

A more positive picture emerges for the role of media on imagination when the *quality* of the content that children view is considered. More specifically, educational and prosocial programs that are designed to cultivate creativity and imaginative play, such as *Mister Rogers' Neighborhood* and *Dora the Explorer*, generally do so (Calvert et al., 2007; Friedrich-Cofer, Huston-Stein, McBride-Kipnis, Susman, & Clewett, 1979). Environmental supports, such as having children play about the content, are especially likely to yield beneficial outcomes for imaginative play

(e.g., Friedrich & Stein, 1975). Longitudinal research also finds more creative activities during adolescence for those who viewed more versus less imaginative television programming, such as *Mister Rogers' Neighborhood*, during early childhood, even after including numerous statistical controls (D. R. Anderson et al., 2001).

Exposure to imaginative role models, as predicted by social cognitive theory, is one reason that imaginative play and creativity may increase after exposure to television programs such as *Mister Rogers' Neighborhood*, because Fred Rogers modeled imaginative activities (Valkenburg & Calvert, 2012). The slow pacing and pauses built into some children's programs, which allow time for reflection and interaction, are other possible reasons that certain kinds of media content may promote imaginative play and creativity (Calvert & Valkenburg, 2013).

Lean forward media can also increase imaginative play, particularly with friends. When 10- to 12-year-old children were participating in computer-generated interactions, in this case within a visual and textual multiuser domain (MUD), they sometimes engaged in role playing experiences, such as pretending to shoot imaginary balls at a basketball net, or pretending as if they were drowning at a beach (Calvert, Mahler, Zehnder, Jenkins, & Lee, 2003). Children engaged in role-play activities twice as often when they knew the peer in the MUD than when the peer was a stranger (55% versus 27%, respectively; Calvert, Strouse, Strong, Huffaker, & Lai, 2009).

Youth can also create content on sites that provide opportunities to do so. Scratch, a relatively simple programming language created at MIT, allows children to create their work on their own computer and then post their program in a shared online space. Children who created programs in Scratch also engaged in remixing, in which they build on the products that others have created. In one qualitative study, Brennan, Monroy-Hernandez, and Resnik (2010) described a girl who followed another girl's stories about a hero named Jodie that she had created and represented in words and still-frame visual depictions. As the reader became increasingly interested in the stories, she imagined visual moving images. She contacted the author online and asked if she would like a collaborator who could animate the stories. Hence, the animated stories of the superhero Jodie came to life in 10 episodes through a collaborative team effort. Describing these kinds of collaborative experiences could be informative about how creative group work will take place in the 21st century, as major scientific advances are often now the output of teams of scholars rather than the output of a single individual.

Creative innovation also occurs in the online interactions of youth as they develop and use new language systems in which abbreviated codes represent words, such as *brb* (for be right back) and *lilas* (for love you like a sister) (Calvert, Mahler, et al., 2003; Greenfield & Subrahmanyam, 2003). Coded language, also called Netpeak, includes iconic images called emoticons to express feelings, such as a smiley face 😊, or :- ) when text based, to represent happiness, or a frowning face ☹, or >:( when text based, to represent anger (Huffaker & Calvert, 2005).

Daydreaming is more likely to be stimulated than disrupted by television viewing (Valkenburg & van der Voort, 1994). The kind of content that is part of a child's media diet also plays a role in daydreams. For instance, Dutch children who viewed more aggressive television programs reported the most aggressive, heroic content, whereas those who viewed nonviolent children's programs reported more positive content in their daydreams (Valkenburg & van der Voort, 1995).

### ***The Reduction Hypothesis***

According to van der Voort and Valkenburg (1994), television viewing can reduce imaginative play due to *displacement* (viewing television takes time away from participating in imaginative activities), *passivity* (television viewing makes children lazy processors, which is the antithesis of the active involvement required for imaginative activities), *rapid pacing* (television images come and go so quickly that there is no time to reflect, a key component of imaginative activities), *arousal* (television viewing overstimulates children, and hence they become hyperactive and impulsive rather than reflective, which is required for imaginative activities), and *anxiety* (television viewing frightens children, thereby disrupting imaginative activities). The data mainly support *displacement* as the reason that television viewing disrupts imaginative play (van der Voort & Valkenburg, 1994). For example, children shifted about an hour and a half per day of playing to viewing when television was first introduced in the United States (Maccoby, 1951), and children played less when television was introduced in their towns when compared to other towns where children still only had radios (Schramm, Lyle, & Parker, 1961). However, play time increased when television was initially introduced in Australia (Murray & Kippax, 1978) so not all research finds displacement. Background television exposure also decreased the amount of time that 12-, 24-, and 36-month-olds spent playing, partly because looking at the television screen disrupted play (Schmidt et al., 2008).

For creative imagination, Valkenburg and van der Voort (1994) argued that the evidence supported the reduction hypothesis via *visualization* (the ready-made images of television productions disrupt children from making their own images), *arousal* (the rapid pacing in television programming increases impulsiveness and restlessness, thereby disrupting imaginative activities), and *displacement* (television viewing displaces other activities, including imaginative ones). In support of the visualization hypothesis, children typically generated more novel story endings when they listened to radio stories than when they watched stories on television (Greenfield, Farrar, & Beagles-Roos, 1986; Valkenburg & Beentjes, 1997). The arousal hypothesis has not been directly tested, but the foundation of this argument is consistent with the reduction hypothesis. Specifically, viewing violent television programs creates more arousal (Zillmann, 1991), intolerance for delays (Friedrich & Stein, 1973), and restlessness (Singer et al., 1984). The displacement hypothesis has also received support: The longer television was available in a Canadian town, the more creative imagination scores declined (L. F. Harrison & Williams, 1986).

The visualization, passivity, and rapid pacing hypotheses were used to examine potential reduction effects for daydreaming as a function of television exposure. These hypotheses were not supported by empirical studies (Valkenburg & van der Voort, 1994).

### Summary

The extant data suggest that heavy television viewing typically reduces imaginative play and creativity. Television viewing can displace imaginative play, and there is some support for visualization, arousal, and displacement effects for creativity. However, the kind of content viewed also makes a difference, with imaginative programs leading to imaginative play in the short term, and creativity in the long term. Moreover, emerging qualitative data suggest that using interactive media to make content can lead to creative activities. Daydreaming in the form of internally generated fantasies is positively influenced by television viewing, with the kind of content viewed becoming integrated into children's fantasies, but little is known about the role of newer interactive media and daydreaming. The loss of quiet environments *per se* has not been studied as a potential explanation for the reduction hypothesis, even though quiet, reflective time has been proposed as a necessary ingredient for imaginative activities (D. G. Singer & Singer, 2005).

### Media and Sleep Patterns

Sleep disturbances, in the form of later bedtimes, nightmares, and tiredness from lack of sleep, are linked to media use. Paradoxically, many youth use some type of media as sleep aids to help them go to sleep. Approximately 37% of Flemish adolescents reported that they watched television programs to go to sleep, 22% played computer games, 60% listened to music, and 55% read books (Eggermont & Van den Bulck, 2006). Adolescents who relied on television programs, computer games, and music as sleep aids slept less well and reported being more tired than those who read books (Eggermont & Van den Bulck, 2006).

Using time-use diaries from the Child Development Supplement of the Panel Study of Income Dynamics, Adam, Snell, and Pendry (2007) found that 5.5- to 11.9-year-old U.S. children who watched more television on weekdays had fewer total hours of sleep, although the effect was small. During the weekend, television viewing and playing computer or video games predicted less sleep for younger children as well as older adolescents because of later bedtimes. African American and Latino/a American children slept less than their European American peers did during the weekend, in part due to watching television programs and playing computer and video games (Adam et al., 2007).

One problem in sleep disorders is going to sleep (Mindell, Moline, Zendell, Brown, & Fry, 1994). Exposure to light can alter circadian rhythm cycles that influence when one is awake and when one is asleep (Lewy, Sack, Miller, & Hoban, 1997). In an experimental study comparing young Japanese male adults who were exposed to computer screens that varied in light levels (high or low) and cognitive demand levels (high or low), the cognitive demand, not the brightness of the computer screen, impacted sleep cycles. In particular, delayed sleep latency occurred during the high-cognitive-demand task due to increased heart rates and reported decreases in sleepiness (Higuchi, Motohashi, Liu, & Maeda, 2005), which is consistent with arousal theory. The total amount of REM sleep, which involves dreaming, also decreased during high over low cognitive demands, but again was not influenced by onscreen light levels (Higuchi et al., 2005). These findings suggest that engaging tasks may disrupt sleep onset. The sample for this study was small, and hence, light cannot be ruled out as a distractor when going to sleep.

The noise that comes from audio tracks has not been examined, even though Japanese adolescents reported

falling asleep more quickly when they were in quiet rather than noisy rooms (Alexandru et al., 2006). Loud noises, which periodically occur in television programs and video games, elicit primitive attentional orienting responses to video screens from children who are Ages 4 through 10 (Calvert et al., 1982; Calvert & Gersh, 1987; Calvert & Scott, 1989). The implication is that children who go to sleep with television programs playing in the background may have difficulty staying asleep due to changes in the audio track.

Another potential noise disruption during sleep is a text or a call on a mobile phone. Van den Bulck (2007) found that Finnish adolescents who reported sending or receiving texts on their mobile phones after the lights were out were more likely to report being tired a year later. Although many of these texts were exchanged soon after bedtime, almost one fifth of these youth reported sending or receiving texts at all hours of the night. One possible explanation is that these sleep disruptions could be caused by sounds on mobile phones that alert youth that a text is arriving, thereby interrupting their sleep cycles.

Media diets have also been linked to sleep disturbances. For example, Paaoven, Pennonen, Roine, Valkonen, and Lahikainen (2006) found that Finnish 5- and 6-year-old children who were passively exposed more rather than less often to adult-oriented television programs had more problems with transitions between being awake and asleep as well as more overall sleep problems, even after controlling for socioeconomic status, family conflicts, family income, and the father's work schedule. Consistent with these findings, the kind of program is associated with sleep problems. For instance, exposure to an adult-oriented police series was linked to disorders involving transitions between being asleep and awake. By contrast, links between the quantity of active exposure to child-directed programs and sleep disorders were not significant after controlling for other background variables (Paaoven et al., 2006). Viewing scary content is also linked to sleep problems, as is having a television set in children's bedrooms (Cantor, Byrne, Moyer-Guse, & Riddle, 2010). In short, passive exposure to adult-oriented programs is detrimental to children's sleep as is exposure to scary content, but active exposure to child-oriented programs is not.

Taken together, the data indicate that youth who have electronic media at their fingertips, particularly in their bedrooms throughout the night, sleep less well and have more problems going to sleep and waking up than their peers who read before going to sleep. These problems come from

engagement with media content, self-inflicted interruptions in their own sleep cycles when they interact with their peers on devices such as mobile phones, and possibly changes in light or audio levels. Virtually all of the data, however, are correlational.

It seems likely that children's use of electronic media may exacerbate the problems associated with going to and staying asleep, but a potential third factor may underlie this relation: Some youth have difficulties going to sleep in the first place, and hence, elect to use media. Adolescents across numerous cultures report going to bed later as they get older (Crowley, Acebo, & Carskadon, 2007). Their choice to use media at bedtime as a sleep aid may create a self-defeating cycle where youth are more likely to stay awake very late and to sleep poorly because electronic media disrupts rather than aids them in obtaining a restful night of sleep.

Reading a book at bedtime is linked to better sleep, yet if that book is sufficiently engaging, reading could potentially keep youth awake into the wee hours of the morning as well. Those who think too much when going to bed may find some level of distraction useful, with reading a calm or boring book or white noise from another electronic medium providing a pathway to falling asleep. Little empirical work has been directed at this approach.

### Media and Concentration

Multitasking can occur when a child is using various windows within a medium (e.g., listening to music while searching the Internet), with multiple media at a time (e.g., watching television while texting on a mobile phone), or across various media and nonmedia activities (e.g., driving a car while listening to a radio or while texting on a mobile phone). Switching back and forth between tasks can disrupt concentration and even compromise safety. For instance, texting while driving is a problem behavior for adolescents because visual and motor attention are needed both to drive and to text, thereby competing for attentional focus (Halsey, 2012). See Anderson and Kirkorian, Chapter 22, this *Handbook*, Volume 2, for a discussion of media and multitasking.

## THE SOCIAL NATURE OF MEDIA ENVIRONMENTS: ELECTRONIC FRIENDS AND COMMUNICATIONS

Media have always been rooted in social relationships. Book, radio, film, and televised stories communicate



fictional as well as factual stories through oral, written, and visual forms. These stories provide readers, listeners, and viewers with the option to drop into the lives of others, to learn about the everyday social experiences that comprise daily life as well as potential ways to deal with the inevitable conflicts that occur in human interactions.

Mediated communication has also become a norm for social interactions, with social networks like Facebook attracting millions of users who communicate with one another online (Pempek et al., 2009). Although phone conversations have been popular among adolescents for decades, mobile technologies now add opportunities for youth to interact socially with one another through texting and to connect to one another through online interfaces, such as social networking sites. These technological changes make face-to-face interactions less prominent in everyday experiences, supplementing them, or in some cases even displacing them, with mediated communications (Calvert & Wartella, 2014). In addition to the actual people in children's daily worlds, social relationships include parasocial relationships in which children treat media characters as friends, role models that are depicted in programming, and electronic interfaces in which youth link up with their friends as well as with strangers (Calvert, 2013).

### **Prosocial Media: "It's a Beautiful Day in the Neighborhood"**

Prosocial media involves demonstrating or eliciting socially constructive behaviors (Calvert, 1999), as when Fred Rogers sang about and shared many beautiful days in his neighborhood with his young viewers. The range of behaviors that researchers have included as prosocial, however, has varied considerably (Friedrich-Cofer et al., 1979; Hearold, 1986; Mares & Woodard, 2005). Prosocial behaviors are defined here as socially constructive behaviors, such as positive social interaction skills and altruism, but other definitions will be included when relevant. Most prosocial television content is presented via stories (Calvert & Kotler, 2003).

### **Prosocial Content**

Prosocial content became prevalent during the 1970s due to pressure on broadcasters to decrease the amount of violent content (Calvert, 1999). In a comparison of the content on children's programs broadcast on CBS, ABC, and NBC to those on PBS, altruism was the most frequently portrayed prosocial behavior, occurring more often in programs

broadcast by PBS than by the commercial stations ( $M = 9.73$  versus 6.81 acts per half hour; Poulos, Harvey, & Liebert, 1976). Content analyses documented particularly high levels of prosocial content for *Mister Rogers' Neighborhood*, which contained 95% positive reinforcement versus 5% punishment (Coates & Pusser, 1975).

When deregulation of children's programs occurred in the 1980s, prosocial content waned, only to be followed by a reappearance in frequency during the 1990s with the passage of the Children's Television Act (CTA), which required broadcasters to provide educational and informational television content for children (Calvert, 2008b). The Federal Communications Commission (1991), the government agency tasked with enforcing the CTA, defined educational television very broadly, including any kind of content that can advance children's cognitive, informational, or socioemotional needs. When this definition was combined with the FCC implementation of the 3-hour rule, which required each commercial broadcaster to provide a minimum of 3 hours of educational and informational programming per week, prosocial television programs received a boost.

In a sample of television programs that broadcasters designated as educational and informational (E/I) to meet the requirements of the Children's Television Act, Jordan, Schmitt, and Woodard (2001) found that 51% of the programs involved prosocial content about social and emotional lessons. Prosocial lessons included appreciation of self for 0- to 4-year-olds, interpersonal (e.g., cooperation) and intrapersonal lessons (e.g., self-esteem) for 5- to 11-year-olds, and more mature prosocial topics like dating and sexual harassment for 12- to 16-year-olds. The educational strength of these programs was high for 33% of the programs, moderate for 46% of them, and minimal for 21% of them (Jordan et al., 2001).

In 2008, Wilson, Kunkel, and Drogos conducted a content analysis of educational/informational (E/I) television programs using the system previously developed by Jordan et al. (2001). Their report, titled "Educationally/Insufficient," found that the television programs being broadcast for children had become weaker when compared to the earlier analysis (i.e., Jordan et al., 2001). Only 13% of the programs were rated as highly educational, 63% were rated as moderately educational, and 23% were rated as minimally educational. Broadcasters again presented prosocial content to fulfill their public obligation. Almost three-quarters of all episodes in their sample contained a social or emotional lesson, focusing on positive social interactions (26%), self-esteem (18%), self-restraint (12%),

altruism (8%), emotional skills (7%), and acceptance of others (2%) (Wilson et al., 2008).

### ***Influences of Prosocial Media on Children's Learning and Behavior***

The early research about the impact of prosocial television often used Bandura's social cognitive theory, predicting that prosocial behaviors are acquired through observational learning just as aggressive behaviors are. In a classic study that examined children's performance of prosocial behaviors, Stein and Friedrich (1972) compared 3- to 5-year-old children's behaviors before and after 9 weeks of exposure to prosocial *Mister Rogers' Neighborhood* episodes, aggressive Superman and Batman cartoons, or to nature films that had neutral content. Children who viewed episodes of *Mister Rogers' Neighborhood* persisted longer at tasks, followed rules better, and tolerated delays better than the other two groups. Those from low- but not high-socioeconomic backgrounds also increased in positive interpersonal behaviors, including cooperation, nurturance, and labeling their feelings. First grade children who viewed a prosocial *Lassie* episode in which a boy rescued Lassie's puppy also pushed buttons to help dogs who were barking in a kennel more often than children who viewed a *Lassie* episode with neutral content where the boy character took a violin lesson or an episode of the *Brady Bunch* in which there was a seesaw competition (Sprafkin, Liebert, & Poulos, 1975).

Although everyone loves good stories, their meaning can be elusive. Young children are deficient in processing character emotions and motives, key skills for mature story comprehension (W. A. Collins et al., 1978). In particular, 3- to 5-year-olds had difficulty remembering the emotions of television characters at the end of the story (Hayes & Casey, 1992), and 8-year-olds judged character actions, goals, and successful outcomes as equally important in understanding a simple textual narrative story, whereas 11-year-old preadolescents judged the main character's goals and outcomes as more important than the character actions (Van den Broek, 1989). Even adolescents struggle with plot comprehension when viewing a complex film, with those who are more versus less empathic with media characters demonstrating more identification with characters, better plot comprehension, and stronger feelings about the characters (Calvert, Strouse, & Murray, 2006).

Environmental aids, such as role playing and verbal labeling, that are provided by adult experimenters can assist early learning. Girls' learning of prosocial themes increased when an adult provided verbal labels of the

program content, and boys' prosocial behaviors increased when an adult provided supplemental role-playing activities with puppets to support the program content (Friedrich & Stein, 1975). Verbal labels delivered by an adult who viewed with children also increased young children's understanding of prosocial program themes (Watkins, Calvert, Huston-Stein, & Wright, 1980) as did advance organizers and intraprogram synopses of central prosocial program content that were embedded in the program (Calvert, Huston, & Wright, 1987; Neuman, Burden, & Holden, 1990). Formal production features like action (i.e., movement) can also improve children's story comprehension by providing a visual code that children can use to supplement more abstract linguistic content (Calvert et al., 1982).

To examine the effectiveness of the programs created to meet the requirements of the Children's Television Act (CTA) on children's learning, Calvert and Kotler (2003) conducted a short-term longitudinal examination of second- to sixth-grade children's learning from their favorite programs, which compared commercial broadcasters, who were required to comply with the CTA, to cable and public broadcasters' offerings who had no such requirement. Prosocial programs were the overwhelming favorites of children. Children, particularly girls, reported many lessons after viewing prosocial programs, including caring about others, helping, honesty, loyalty, persistence, and social interaction skills such as being a good friend. Children learned equally well from their favorite commercial or non-commercial educational television programs, but did not learn as much from their favorite programs that were strictly designed for entertainment. Overall, these findings indicated that children derive measureable benefits from viewing prosocial programs that are part of media-related policies designed to improve children's television programming.

Meta-analyses reveal positive effects after viewing prosocial programs. For example, a meta-analysis of 230 studies conducted by Hearold (1986) indicated strong and enduring effects of viewing prosocial content ( $r = .34$ ). Similarly, a meta-analysis of 34 studies that focused on interpersonal interactions found an overall effect size of  $r = .27$  after exposure to prosocial content, with the effects increasing from Age 3 to their peak at Age 7 (Mares & Woodard, 2005).

In contrast to prosocial television programs, studies about gaming experiences that are designed to promote prosocial behavior are relatively rare. One three-pronged study of youth from varying nations, conducted by Gentile

et al. (2009), is an exception. In a longitudinal examination of Japanese 5th (mean age = 10.9 years), 8th (mean age = 13.6 years), and 11th graders (mean age = 16.6 years), exposure to prosocial video games led to increases in prosocial behavior approximately 3 months later. Similarly, a cross-sectional study demonstrated that children who were in secondary school in Singapore (mean age = 13.0 years) who played more prosocial video games were more likely to help, cooperate, share, and demonstrate empathy. Consistent with these findings, an experimental study found that U.S. college students (mean age = 19.2 years) were more likely to help their partner after playing a prosocial than a neutral or a violent video game (Gentile et al., 2009). These findings suggest that there is promise in having children play prosocial video games to promote prosocial behavior.

In summary, prosocial programs can provide valuable life lessons about positive interpersonal and intrapersonal skills, many of which can be translated into behavior. Plot comprehension is important for children to learn prosocial lessons, particularly because many plots with positive outcomes often include conflict before the prosocial resolution occurs (Lovelace & Huston, 1983). Young children often benefit from environmental support from adults in the viewing environment or that are built into the actual program when their understanding of the program is unclear.

### Parasocial Relationships With Media Characters

In the current transmedia environment in which characters traverse multiple offline and online experiences, children and youth have numerous opportunities to create mediated friendships with characters (Calvert & Richards, 2014). Favorite characters are invited into children's homes through television and computer programs as well as through children's play with toys (Bond & Calvert, 2014). Moreover, media characters are almost always available for children as playmates in their homes, even when their real-life peers are not. Popular media characters are also a part of the marketing experiences that target numerous products at children (IOM, 2006). Through these ongoing and sustained experiences, children sometimes form parasocial relationships, particularly with their favorite media characters, which can fill some of children's social and informational needs (Hoffner, 2008).

Little research has been conducted on parasocial relationships during the childhood years, instead relying on the importance of adult role models (Bandura, 1986; Friedrich & Stein, 1973). However, role models involve vertical

relationships rather than the horizontal relationships that characterize childhood friendships (Calvert & Richards, 2014). Bond and Calvert (2014) found that parents reported three major components of children's parasocial relationships: *character personification* (e.g., child trusts character; treats character as friend; thinks character has thoughts and emotions); *attachment* (e.g., character makes child feel safe, character's voice soothes child); and *social realism* (e.g., child thinks character is real). Some parasocial relationships emerge because the character directly addresses the audience in a pseudo parasocial interaction (Bond & Calvert, 2014), but parasocial relationships can also emerge when children view characters as they interact with one another onscreen, an observational learning outcome (Calvert, Richards, & Kent, 2014).

Meaningful social relationships with media characters may foster early learning by serving as social partners (Richert, Robb, & Smith, 2011). For instance, 18-month-olds who nurtured a plush puppet version of a character during play over a 3-month period subsequently learned more from a task presented onscreen by that character (Gola, Richards, Lauricella, & Calvert, 2013). Similarly, toddlers who played with and nurtured a personalized interactive character (i.e., programmed to have the same favorite color, foods, etc., as the child) learned more from a subsequent screen-based task than a control group did, but toddlers who had a nonpersonalized interactive character did not (Calvert, Richards, et al., 2014). Taken together, these results suggest that toddlers who treat characters as persons and who nurture them, a behavioral indicator of a parasocial relationship (Gola et al., 2013), subsequently learn more from those characters.

Although characters can become early teachers of children through the social relationships that children form with them, very few apps take advantage of this relationship. To address the role of media characters in toddlers' learning from touch screen devices, Richards and Calvert (2013) developed an experimental app to compare 32-month-olds' belief in the credibility of the familiar *Sesame Street* Elmo character to the unfamiliar Taiwanese DoDo character. The app varied the accuracy of the character's labels of familiar and unfamiliar foods, and then presented novel foods with made-up labels. Children were more likely to choose the previously accurate character for unfamiliar fruits, regardless of prior familiarity with the character. These findings suggest a more advanced style of determining credibility when toddlers use interactive touch screens, as 3-year-olds chose a familiar over an unfamiliar teacher's labels for novel objects portrayed on video, even when the familiar,

trusted teacher had previously labeled the familiar objects incorrectly (P. Harris & Corriveau, 2011).

### Social Media: Being and Staying Connected

The developmental needs of children and adolescents include learning how to interact with peers, make friends, and develop a mature identity (Subrahmanyam et al., 2006). These kinds of developmental advancements require peer interactions, which were initially limited in online experiences because early interactive media platforms only allowed asynchronous communications, such as email, or synchronous communications that were predominantly with strangers, such as chat room experiences (Calvert & Wartella, 2014). Innovative applications and faster Internet speeds enabled the emergence of social networking sites that connected youth with their friends and families rather than with strangers. Social networking sites include MySpace, Facetime, Friendster, Twitter, and Facebook.

Early Internet users visited chat rooms and multiuser domains (which are spaces in which youth can interact in a flexible form or in a game-like fashion that was originally built on a board game) where they assumed personae in which they took on names and identities (Turkle, 1995). Although the flexibility to be anyone that they desired was often embraced by many adults (Turkle, 1995), youth generally communicated who they were online in ways that had been historically important identity markers in offline experiences (Calvert, 2002). For instance, 55% of adolescents disclosed their own age, sex, and location in response to the chat room query *a/s/l*, i.e., age/sex/location (Subrahmanyam et al., 2006), and often included their ethnicity as well (Tynes, Reynolds, & Greenfield, 2004). Rather than creating a gender- and color-blind society, the Internet became yet another forum in which these same identifiers were typically disclosed (Calvert, 2002).

The early relationships that youth developed with others that they met online were also characterized by weak ties rather than strong ties. Specifically, users who met other people online spent less time together, relationships were more superficial, and less closeness was felt toward them when compared to those who were known through face-to-face interactions, in part because online youth were interacting with strangers rather than with people whom they knew offline (Subrahmanyam, Greenfield, Kraut, & Gross, 2003).

As digital natives, adolescents were among the first to embrace social media to communicate with their friends (Pempek et al., 2009). Eighty percent of U.S. adolescents

use at least one social media platform (Lenhart et al., 2011). College students often reported hundreds of friends on their Facebook profiles, and they reported spending most of their time communicating with those friends, particularly those from their high school years who did not attend their current college, thereby addressing the important developmental need of adolescents for friendship formation and maintenance (Pempek et al., 2009).

Twitter is a social networking site that allows users to microblog. Microblogging occurs when users post brief text updates about the events that are happening in their everyday lives, what they are experiencing, and how they are feeling (McFedries, 2007). On Twitter, each entry is limited to 140 characters of text, including emoticons to express their feelings through pictorial icons in their posts. Users of Twitter have the ability to interact with one another by mentioning others in their updates or by reposting original posts from their friends' Twitter feeds. Users can also follow others' tweets, such as those posted by celebrities. By microblogging, youth can communicate and share content quickly in a world that increasingly requires their attention to be divided across multiple tasks. Nearly 20% of adolescents reported regular use of Twitter, double the number of adolescents using Twitter just 2 years earlier (Lenhart et al., 2011). Individuals who interacted with others on Twitter often knew each other offline or had very similar interests (Java, Song, Finin, & Tseng, 2007). Online interaction with real-life friends via social media venues like Twitter can strengthen perceptions of friendship and lead to higher levels of emotional well-being among adolescents (Valkenburg & Peter, 2007).

Social networks have focused mainly on adolescents, but a report by the Joan Ganz Cooney Center (Grimes & Fields, 2012) examined children's use of what they labeled as social networking forums, an expansion of the traditional definition of social networking sites to include virtual worlds and game spaces where millions of children are interacting with one another. To do so, they examined key characteristics of social networking sites and then applied them to children's online activities.

Grimes and Fields (2012) found that children's social networking sites *support communications among participants* by chat bubbles or whispering, as previously done in chat rooms when youth moved from a public forum to a one-on-one instant messaging interaction (Subrahmanyam et al., 2006). Social networking sites have users develop *personal profiles* in which they describe themselves, which tend to be consistent with the real self (Pempek et al., 2009). Children create representations of themselves on children's



sites, such as avatars and virtual pets and dolls. Social networking sites allow users to *leave residues of their online presence in relation to other users on the site*, such as posts, friend lists, and belonging to specific groups. Finally, social networking sites have *hierarchies of access*, such as age restrictions to join Facebook (Grimes & Fields, 2012). This approach to social networking captures the kinds of activities that children are more likely to do with one another online, as children play together more than they post written comments or videos. Research about how younger children interact with one another on these sites is notably absent and needed (Grimes & Fields, 2012).

### THE MEAN AND SCARY WORLD: MEDIA VIOLENCE AND SCARY CONTENT

When rampage killings take place that bear striking similarity to children's media experiences, such as two male adolescents repeatedly playing the videogame *Doom* before attacking their teachers and fellow students, the public and policymakers inevitably ask if media exposure played some role in these deadly execution style killings. Gerbner, Gross, Signorielli, and Morgan (1986) argued that heavy exposure to television content cultivated a view that the world was a mean and scary place due to the amount of violence in programs. Cultivation effects could take place when children are exposed to other kinds of violent media, such as the news. In addition to the scary aspects of violent content, children are exposed to other kinds of scary content, such as supernatural events (Cantor, 2012). Exposure occurs because children select these kinds of experiences, or are exposed to them by another person.

#### Media Violence

Children look up to certain people, including media personalities, adopting the behaviors of social models through observational learning (Bandura, 1986). Because of social concerns about the impact of violent content on children's aggression, researchers have systematically tracked the amount of violent content (e.g., Gerbner, 1972; Gerbner, Gross, Morgan, & Signorielli, 1980; Wilson et al., 2002) and conducted systematic studies about the role of violent content on children's antisocial behavior (C. Anderson, Gentile, & Buckley, 2007; Bandura, 1965; Stein & Friedrich, 1972). Social cognitive theory, arousal theory, psychoanalytic theory, cultivation, and script theories have also been used to frame media violence effects.

#### Violent Content

The selection of one operational definition for violent acts depicted on television has been challenging, with the inclusion of intent used in some definitions, but not in others (see Wilson, 2008). The National Television Violence (NTV) study defined violence as acts or threats of physical force intended to harm other animate beings (Wilson et al., 1997).

In the NTV study, violent content in television programs broadcast on commercial stations, independent stations, PBS, and basic and premium cable were analyzed. From 1994 to 1997, 60% of television programs contained violent content, with PBS having the lowest and premium cable having the highest rates of violence (Wilson et al., 1997, 1998). Sixty-nine percent of children's programs in the sample contained violence, compared to 57% of nonchildren's programs (Wilson et al., 2002). In the NTV study, 90% of films broadcast on television contained violent content (Smith et al., 1998). By contrast, only 15% of music videos contained intentional physical aggression, but only the visual, not the musical track with lyrics, was examined for aggressive content (Smith & Boyson, 2002).

Violent content is also heavily concentrated in video games. Using content analyses, 98% of video games with a Teen (T) rating that entered the market place in 2001 and 64% of video games with an Everyone (E) rating that entered the market place between 1985 and 2000 contained violent content (Haninger & Thompson, 2004; Thompson & Haninger, 2001). Sixty-eight percent of the most popular video games in 1999 contained violent content (Smith et al., 2003). Overall, the data indicate the heavy use of violence in children's media.

#### The Influence of Violent Content on Learning and Social Behavior

Given the pervasive use of violent content in media, concerns have been raised for decades about how media violence impacts children's aggressive behavior. Experimental studies demonstrated aggressive outcomes after children observed violent actions in films or in television programs (Bandura, 1965; Wilson, 2008). Although questions have been raised about the impact of televised violence in field studies (Freedman, 1984), one of the more influential field studies of televised violence demonstrated aggressive outcomes for young children who were initially above the median in aggressive behaviors (Friedrich & Stein, 1973). Seven meta-analyses also indicated that viewing high concentrations of televised violence contributes to children's antisocial behavior, with effect sizes ranging

from .11 to .31 (median value = .20; Comstock, 2008). Risk factors for aggression included antisocial behavior, disruptive disorder behaviors, poor social relationships, poor psychological well-being, and parents who treated their children in a rigid or indifferent style (Comstock, 2008).

Scholars often point to psychoanalytic theory as the reason that the media industry believes that violent content is harmless (Bushman & Huesmann, 2012). In Freud's version of psychoanalytic theory, people are innately aggressive, and viewing violent content or playing violent video games is predicted to harmlessly drain off those natural tendencies through catharsis (Wilson, 2008). Research demonstrates, however, that viewers become more aroused and more, not less, likely to imitate and enact aggressive actions after exposure to violent content (Calvert, 1999). Jung's ideas of archetypal images, including the hero who is aggressive and prosocial for a just cause, are often used in television and film scripts, as the hero has been a compelling person and character throughout time (Calvert et al., 2001), but studies on this approach are virtually nonexistent.

A challenge in showing heroic portrayals to young children is that they view the world as good or bad, not nuanced, and their plot comprehension is often poor so they do not understand the character's motives (Calvert, 1999; Gunter, 2008). For instance, older boys were more likely to choose helpful than hurtful behavioral options when they understood an episode of a simple cartoon, *Superfriends*, that was presented with a mixed prosocial and aggressive message, but the opposite pattern occurred for younger boys (Liss, Reinhardt, & Fredriksen, 1983). Consistent with these findings, adolescents from the United States and Taiwan who demonstrated poor plot comprehension of a film were more likely to identify with the villain (Calvert, Murray, & Conger, 2004). These findings suggest that improving children's and adolescents' plot comprehension is important for moderating the impact of filmed or televised aggression on their role model choices and their aggressive conduct.

As lean forward media became more standard in homes, children became participants in, not just observers of, violent actions (Calvert & Tan, 1994). Meta-analyses revealed that playing violent video games increased children's aggressive actions, ideation, and feelings and physiological arousal while reducing empathy as well as prosocial actions (C. Anderson et al., 2010). These effects occurred for people in Eastern as well as Western cultures, females as well as males, and in experimental studies

for all forms of aggression (C. Anderson et al., 2010). Other meta-analyses, however, have demonstrated minimal effect sizes once controlling for publication bias, in which studies with nonsignificant findings are not published (e.g., Ferguson, 2007).

The Proteus effect describes how individuals are affected by their digital self-representation (Yee & Bailenson, 2007). In a virtual environment, for instance, those who were assigned to be more attractive avatars were more likely to move closer to another's avatar and to reveal more information about themselves than those who were assigned to be an unattractive avatar; similarly, those who were assigned to have taller avatars viewed themselves as more self-confident than those who were assigned to have shorter avatars (Yee & Bailenson, 2007). Building on the research about the Proteus effect, Pena, Hancock, and Merola (2009) primed aggression by having players' avatars wear either black or white cloaks in a virtual world. Those whose avatars wore black coats reported more aggressive attitudes and intentions about their behaviors than those who wore white cloaks (Pena et al., 2009). Playing aggressive video games with a personalized avatar rather than a nonpersonalized avatar also resulted in increased aggressive behavior and arousal by players (Fischer, Kastenmuller, & Greitemeyer, 2010).

Interactive media have made it possible for youth to engage in cyberbullying (Dake, Price, & Maziarz, 2012; Dilberto & Matthey, 2009). Bullying has been defined as repeated, intentional aggressive acts toward another person (Agatston, Kowalski, & Limber, 2007). Cyberbullying involves the same behaviors, but takes place electronically rather than in person. In a survey of young adolescents ( $N = 3,767$ ), 11% reported being a cyber victim, 4% reported being a cyberbully, and 7% reported being both a cyberbully and a cyber victim (Kowalski & Limber, 2007). In a survey of a nationally representative sample of adolescents ( $N = 7,182$ ), Wang, Iannotti, and Nansel (2009) found that approximately 14% of these youth reported being bullied electronically in the previous 2 months. Boys were more often cyberbullies, and girls were often cyber victims. African American youth were more likely to be cyberbullies than cyber victims. Adolescents who reported strong parental support were less likely to be cyberbullies or cyber victims, but having a large number of friends was not a protective factor, as is the case for traditional bullying (Wang et al., 2009).

In summary, exposure to media violence can increase aggressive and antisocial behaviors due to arousal, social learning, priming of aggressive responses, and

the development of aggressive scripts and schemas. Little evidence supports the idea of catharsis. Plot comprehension also influences outcomes, thereby making younger children who have poorer plot comprehension skills at risk for antisocial outcomes after viewing aggressive content (Calvert, 1999). Although there is some disagreement about the evidence (e.g., Ferguson, 2007; Freedman, 1984), viewing or interacting with televised violence has been treated as a risk factor for childhood and adolescent aggressive behavior (Wilson, 2008).

### Children's Fright Reactions to Scary Media Content

Viewing things that go bump in the night appeal to many children, in part because they enter the realm of fantasy and find the content arousing and entertaining (Zuckermann, 1979). For younger children, however, the lines between what is real and pretend can be tenuous (Valkenburg & Buizen, 2008), and exposure to scary fictional and real events can have enduring effects (Cantor, 2012; Riddle, Cantor, Byrne, & Moyer-Guse, 2012).

The literature in this area is based mainly on parent and child surveys, and on retrospective, autobiographical self-reports, as researchers have been reluctant to show scary content to children in experimental studies for ethical reasons (Cantor et al., 2010). According to Cantor et al. (2010), 76% of 5- through 12-year-old children reported being frightened after exposure to media content, mainly by movies.

Three different reasons have been used to describe exposure to scary television and film content: Children actively select scary content, which would be foreground, intentional exposure; because friends, peers, or other family members select scary content, and children just happen to be there, a background exposure effect; and because children just stumble across scary content and watch it. Children reported the most fright when they did not select the content for themselves, instead watching because someone else had selected the program (Cantor, 2012).

Why do children choose to expose themselves to scary media content when it can frighten them? According to Zuckermann (1979), sensation seeking is a main reason for selective exposure as children seek an optimal level of arousal, and scary content is arousing. Cantor and Reilly (1982) found that 80% of adolescents reported that they liked scary media either somewhat or a lot, and boys reported that they liked scary content more than girls did. Seventy-six percent of adolescents reported that they watched scary television content sometimes or

often, and 55% reported that they viewed scary movies frequently. Nonetheless, younger adolescents reported that they avoided exposure to scary content more than older adolescents did, and girls reported avoiding scary content more than boys did. Overall, then, there is an audience for scary content, although some children prefer not to view it, and 32% of this sample reported regret for having watched certain scary programs (Cantor & Reilly, 1982).

The kind of program content that children reported being frightened by varies with developmental skills, with children's abilities to separate fantasy and reality playing an important role (Cantor & Hoffner, 1990). Consistent with cognitive developmental theories, such as those advanced by Piaget (1954), parents reported that their children who were under Age 8 were most frightened by content based on the physical appearance of characters, such as viewing depictions of monsters or creatures (Cantor & Sparks, 1984). By contrast, parents reported that their adolescents were more frightened than their younger children were of content that required abstract, conceptual processing, such as movies about a nuclear war (Cantor, Wilson, & Hoffner, 1986). Depictions of supernatural events frighten both children and adults, perhaps because even some adults remain somewhat unsure about whether or not these events could actually happen (Cantor, 2006). Children with the most severe fright reactions to fictional portrayals had a television set in their bedroom (Cantor et al., 2010), suggesting minimal parental supervision (Cantor, 2012).

Riddle et al. (2012) found that approximately 35% of a sample of U.S. 5- to 12-year-olds was frightened by the news, with natural disasters, kidnappings, wars, and burglaries being mentioned the most. Unlike exposure to fictional media events, having a television set in one's bedroom did not predict the likelihood of being frightened by a news depiction for younger or older children, nor did restrictive rules by parents prevent their children's exposure to scary news events, perhaps because this exposure was accidental (Riddle et al., 2012).

The aftermath of viewing extremely scary content ranges from short-term fears to enduring anxiety and fright. Sleep disturbances, such as being afraid to go to sleep or having bad dreams, have been reported after exposure to scary media content (Cantor, 2012; Wilson, 2008). Children have also reported physical problems such as stomachaches or headaches as well as anxiety (Cantor et al., 2010). Lingering fears were reported by approximately 25% of those who had viewed a program that really frightened them (Harrison & Cantor, 1999), such as fears

of swimming after viewing the film *Jaws*, in which a great white shark attacked swimmers at ocean beaches (Cantor et al., 2010).

Although some parents restrict their child's viewing of scary content (Riddle et al., 2012), many parents underestimate how frightened their child is after viewing scary content (Cantor & Reilly, 1982). Strategies for fear reduction vary by age. For young children, behavioral strategies such as holding onto another person or covering or hiding one's eyes behind a pillow are often effective in reducing their fright (Cantor, 2012; K. Harrison & Cantor, 1999; Wilson, 1989). By contrast, older more than younger children cope with scary content by using cognitive strategies, such as telling themselves that the content is not real (K. Harrison & Cantor, 1999). Parents and older siblings also use cognitive and behavioral strategies for younger children in the family who are scared (Cantor & Wilson, 1984; Wilson & Weiss, 1993).

Girls in the United States and Holland reported being more frightened by television content than boys did (Cantor, 2012; Valkenburg, Cantor, & Peeters, 2000; Walma van der Molen & Bushman, 2008). Girls used behavioral approaches for fear reduction more than boys did, but both boys and girls reported the use of cognitive strategies to reduce fear (Valkenburg et al., 2000). The effectiveness of reassuring language depends on children's verbal skills. For instance, children were told that most snakes were not poisonous after exposure to a video excerpt from *Raiders of the Lost Ark* where the protagonists were trapped in a snake pit (Wilson & Cantor, 1987). However, younger children were more likely to focus on the word *poisonous* than on the phrase *not poisonous* (Wilson & Cantor, 1987).

In summary, exposure, particularly inadvertent exposure, to scary stories depicted in media can frighten children. Media content frightens youth of all ages, although the kind of media content that is scariest varies by age. Coping with fear by the youngest viewers involves behavioral strategies whereas cognitive strategies are most effective for older viewers. However, actual events, as portrayed in the news, are not fictional events, and hence, are frightening to children who view events that they cannot control.

Arousal theory provides the best explanation for why children expose themselves intentionally to scary events, some of which have enduring effects on their sleep patterns as well as their everyday behaviors where they avoid certain activities. The findings suggest that media portrayals can lead to phobias when a child is unable to cope with

the content that they have viewed. Research on the effects of books and computer games on fear responses have not been studied, and are an important avenue of future research (Valkenburg & Buijzen, 2008).

## MEDIA, GENDER, AND SEXUALITY

Gender is a multidimensional construct that is a central organizer of human experience (Huston, 1983), in part because gender serves as an organizer of children's identities (Erikson, 1963; Kohlberg, 1966). U.S. media, particularly television portrayals, depict a highly gender-stereotyped reality that is rooted in culture but that also reinforces and exaggerates traditional gender values (Calvert & Huston, 1987; Signorielli, 2012). Gendered beliefs are also used by youth to choose what to view and what they do online (Subrahmanyam et al., 2006).

With the onset of puberty during the preadolescent and adolescent years, changes come in identity as an increased interest takes place in defining oneself as a sexual person (Erikson, 1963). In addition to parents and schools, informal teachers about sex can be abundantly found in media, including both traditional observational media as well as newer interactive interfaces. Media with sexual content is presented in two basic ways: embedded in stories that contain both sexual and nonsexual images and content, and as sexually explicit content that is presented by itself (Wright, Malamuth, & Donnerstein, 2012). In the new online environments in which children and youth move fluidly, youth now generate sexual content and share it in their communications and in peer-to-peer file sharing programs (Lenhart, 2009).

### Gender-Stereotyped Content

The content of media can be examined as *who counts*, in terms of quantity of depictions, and *who matters*, in terms of the quality of the images and roles (Calvert, 1999). Women lag behind men in both categories in television programs. In 2010, women comprised 50.8% and men comprised 49.2% of the U.S. population (U.S. Census, 2011). Although a longitudinal content analysis of the number of male and female characters in television programs demonstrated significant increases in the number of females over the past several decades, from 24% in 1967 to 41% in 2009, men still outnumbered women as television characters in television programs compared to their actual



representation in the U.S. population, and men continued to have more prestigious occupations than women did (Signorielli, 2012). The value of women often comes from their physical appearance rather than their occupation. Content analyses documented that women in popular films were younger than their male counterparts (Lauzen & Dozier, 1999), and women in television depictions were likely to have thin and attractive bodies (Fouts & Burggraf, 2000). Overall, the media depicts men as strong, serious, powerful, and heterosexual, and women as passive and emotional (Hust & Brown, 2008).

Children's programs were especially likely to portray characters in gender-stereotyped ways, where females were emotional and romantic (Calvert & Huston, 1987; Signorielli, 2012), and males were muscular and powerful superheroes (Baker & Raney, 2007). Even female characters who were superheroes were still physically attractive and emotional (Baker & Raney, 2007). Content analyses of children's educational and informational television programs found no differences in the number of male and female characters, but male characters engaged in a wider range of roles than female characters did, and no programs had a female lead character (Barner, 1999). Taken together, the findings suggest that children encounter a world of television that adheres to traditional gendered stereotypes.

### **Influences of Media on Gender-Related Processing and Outcomes**

Gender schema theory, social cognitive theory, and cognitive developmental theory are the main theoretical approaches that have been used to understand how gender influences children's selective attention, learning, and behaviors after exposure to, or interaction with, media. In gender schema theory, children develop learned expectations that guide perception, memory, and inference, including gender stereotypes (Calvert & Huston, 1987). Because gender is such an important organizer of identity (Martin & Halverson, 1981), children and youth search for content that can guide their constructions of self. These experiences include exposure to role models that can be viewed on television and in films as well as gendered interactions and peer feedback that take place in online experiences. Cognitive developmental theory examines age-related changes in children's understanding of gender, primarily through gender constancy where children come to understand that their biological sex will never change, which then influences their selective attention to social

models (Huston, 1983). Social cognitive theory focuses on the gendered roles that children observe, which they can then imitate (Huston, 1983).

Consistent with gender schema theory, children seek out television content that matches their gender roles. Boys, for instance, were more likely to view cartoons and action-oriented programs in their homes (Huston et al., 1990), whereas girls were more likely to view programs that focused on social and emotional themes (Calvert & Kotler, 2003). Boys who had attained gender constancy were also more likely to view television programs at home that featured male television characters and that involved sports or action adventure content (Luecke-Aleksa et al., 1995). Gender constant boys were preferentially attentive to boys on screen when compared to gender preconstant boys, whereas girls were equally attentive to both male and female characters, regardless of gender constancy attainment (Luecke-Aleksa et al., 1995). Latino/a American 4-year-old boys, who theoretically should not yet be gender constant, were also less likely to identify with the Latino/a American girl character Dora than were European American boys and all girls (Calvert et al., 2007).

Information that is consistent with gender schemas is recalled accurately, but gender schemas can distort memory of televised content so that it is consistent with expectations (Calvert & Huston, 1987). For instance, when children viewed a televised depiction of a female doctor and a male nurse, they remembered the opposite occupational roles for the characters, except for those who had met an actual male nurse (Cordua, McGraw, & Drabman, 1979). Although all 8- and 9-year-old children remembered content that was relevant to gender roles, those who were highly gender-stereotyped remembered less nontraditional role information than those who were less gender stereotyped (List, Collins, & Westby, 1983). Consistent with these findings, grade-school aged children who were heavy versus light television viewers were more likely to believe that gender stereotypical household chores were performed either by men or women (Signorielli & Lears, 1992). Overall, these findings indicate that memory of gender-stereotypical information is generally quite good, but that children who hold and act in more gender stereotypical ways do not remember counter-stereotypical portrayals as well as children who are less gender stereotyped do.

When second- through sixth-grade school children wrote online reports about their favorite educational television program, their reports contained more male than female characters, more male than female pronouns, and

more masculine than feminine behaviors (Calvert, Kotler, Zehnder, & Shockey, 2003). Girls and boys were equally likely to report male characters in their reports, but girls had more female characters in their reports than boys did. Although girls (69%) were more likely than boys (21%) to write about the heroic actions portrayed in the cartoon *The Wild Thornberrys*, which featured a female lead, reports about this program still contained the most language about heroic actions, a traditionally masculine activity (Calvert, Kotler, et al., 2003).

Consistent with social cognitive theory, children also select same-sex role models more so than opposite-sex role models. For instance, when children were asked which media character they would like to be like, boys chose only male characters and girls chose female characters two thirds of the time (Miller & Reeves, 1976). Consistent with these findings, 3-year-old children who were heavy television viewers selected more gender-stereotypical occupations for their futures than light television viewers did (Beuf, 1974). When media presentations of non-traditional roles for women increased, preadolescent girls developed more interest in the occupations that were frequently portrayed except for girls who continued to view programs that had women in more stereotypical professions (Wroblewski & Huston, 1987). These studies suggest that gendered role models and depictions influence children's decisions about whom they want to be like and what kinds of behaviors they are likely to exhibit.

Children bring who they are to online activities, which influences the kinds of behaviors that they do. Two studies described preadolescent children's online interactions when in the same multiuser domain (MUD) on two occasions, which varied whether the pairs knew one another or not (Calvert, Mahler, et al., 2003, Calvert et al., 2009). Boy pairs moved across different scenes and played with one another, and girl pairs chatted with one another through the dialogue box, regardless of whether they knew one another. When paired with an opposite sex peer that they did not know, boys and girls altered their interactions, with boys writing more and playing less, and girls writing less and moving more (Calvert, Mahler, et al., 2003). However, mixed pair interactions were more strained when the pair knew one another, with boys trying to play games with the girls, and girls trying to talk to the boys through the chat function. These problems occurred, in part, due to different gendered communication and interaction styles (Calvert et al., 2009).

Turkle (1997) found that gender bending, in which players present themselves as the opposite biological sex when

they are online, was common among adult players who frequent MUDS. In contrast to Turkle's findings, surveys of users who role-played in the MUD LambdaMOO found that 50% of players reported the use of only one identity when online, and of those who reported multiple identities, 75% used only one of those identities over a 2-week time frame (Schiano & White, 1998). Similarly, the evidence on gender bending for children and adolescents is weak. For instance, preadolescents overwhelmingly selected an avatar that matched their own biological sex and selected a gendered name for their avatar (Calvert, Mahler, et al., 2003; Calvert et al., 2009). Even when engaging in gender bending, girls continued to chat and boys continued to play (Calvert et al., 2009). Gender-typed names were also found in studies of adolescent youth who were interacting in chat rooms (Subrahmanyam et al., 2006).

Consistent with these findings, Gross (2004) found that approximately 10% of U.S. adolescents reported gender bending as a prank, to preserve their privacy, or to gain access to online sites with age restrictions, and they were more likely to gender bend when with others than when alone. Approximately 10% of Dutch preadolescents and adolescents also reported gender bending when online (Valkenburg, Schouten, & Peter, 2005). It appears, then, that most preadolescent and adolescent online users present themselves and act as one person, perhaps because they stay close to the actual parameters that define who they are during that developmental time frame.

Electronic gaming is a highly gendered activity, with males playing more so than females during childhood and adolescence. Yee (2006) conducted a survey of 30,000 users of Massively Multiuser Online Role Playing Games (MMORPGs), which are online worlds that persist independently of specific users. These sites typically contained mostly violent content in the past, but now provide a range of activities for users. In this 3-year study, Yee found that approximately 85% of the users were male. About 25% of the sample was adolescents, and approximately 97% of the users who were under Age 18 were males. Adolescent males tended to use the game for their own personal gain, and also reported that the friendships that they had within the game were as important as those in their offline experiences. Females who played on these sites were older, typically were introduced to them by a romantic partner, and used the game to build supportive social networks as well as to escape. Nearly half of the study participants reported that they were addicted to the MMORPG world, spending an average of 22 hours a week in these online spaces, with 61% of the sample reporting

that they had spent as many as 10 hours of continuous time at their specific MMORPG.

In summary, observational and interactive media typically present content that is gender-stereotyped, and if not stereotyped, children often use media in ways that are gender-stereotyped. Specifically, children select content that fits their own gender-related beliefs, they tend to remember content that is consistent with traditional gender stereotypes well though children who hold more nontraditional beliefs also remember nonstereotypical content, and they play in gender-stereotyped ways when using interactive media. The data suggest that media serve as a reflection of our broader culture, and that children act accordingly.

### Sexual Content

*Embedded* sexual content is often found in televised or film stories. Kunkel, Eyal, Finnerty, Biely, and Donnerstein (2005) conducted a content analysis of the sexual content broadcast on television programs on 10 channels (four commercial stations, one independent station, one public broadcasting station, and four cable stations), excluding children's programs, the news, and sports programs. Sex was defined as depictions and/or talk about sexuality or sexual behavior. Seventy percent of the programs in the sample contained sexual content. Talking about sex occurred more often than sexual behavior did (68% versus 35%, respectively), but explicit sexual presentations were rarely shown. The percentage of programs containing sexual content also increased significantly over time from 56% in 1998, to 64% in 2002, to 70% in 2005. The content that is popular with adolescents rarely included any information about risk factors for being sexually active or how to protect oneself from sexually transmitted diseases or unwanted pregnancies by acting in a sexually responsible way.

Sexual relationships in television programming typically occurred between unmarried partners in ways that were highly gender stereotyped (Kunkel et al., 2005). For instance, men were depicted as wanting sex for recreational reasons, and women were presented as searchers of love and intimacy in enduring relationships where they were the gatekeepers for sexual activity (Hust & Brown, 2008). Heterosexuality was the norm, with limited presentations of gay, lesbian, or transsexual individuals; when portrayals of sexual minorities did occur, they typically did not involve any kind of sexual interactions on broadcast television programs (Hust & Brown, 2008).

Content analyses have not been conducted on online content. Even so, just about any kind of sexual content can be found online, including sadomasochism and rape (Thornburgh & Lin, 2002).

### Influences of Sexual Content on Children

Most of the data about how sexual content influences youth are surveys or reports about accidental exposure because it is illegal to show sexually explicit content to minors in the United States as well as in many other countries. Most of the experimental evidence about how sexual content affects youth comes from college students' exposure to *embedded* sexual content in television programs and films. Theoretically, exposure to sexual content can affect youth through processes such as the construction of sexual scripts, arousal, desensitization, and imitation.

#### Stories With Embedded Sexual Content

Youth exposure to sexual content has always been a controversial topic in the U.S. (Jowett, Jarvie, & Fuller, 1996), yet adolescents are likely to select television programs with sexual material as their favorites (Kunkel et al., 2005). As exposure increases, the evidence supports desensitization and/or disinhibition to sexual content as well as the emergence of scripts about sexual behaviors. For example, youth who viewed more television content that involved sex between unmarried partners (Bryant & Rockwell, 1994) and who listened to more music videos demonstrated more acceptance of premarital sex (Greeson & Williams, 1987).

While the direction of the relation is unclear, those who viewed more versus less programs with sexual content also engaged in more sexual activity, and they had more negative views about being a virgin (Brown & Newcomer, 1991). Longitudinal research linked more frequent exposure to televised sexual content to sexual activity within the next year for 12-to 17-year-olds (Collins et al., 2004), and within the next 2 years for 12- to 14-year-olds who had a heavy diet of sexual content via television, movies, music, and magazines, even after controlling for a number of other variables (Brown et al., 2006). Parents who talked to their children about television content had children who were less likely to engage in sexual activity than those whose parents did not talk to them (Peterson, Moore, & Furstenberg, 1991), perhaps because family communication patterns influence how children view sexual activity.

### *Sexually Explicit Content*

Both experimental and correlational studies demonstrate that males have more sexually aggressive attitudes toward females after exposure to pornography (Wright et al., 2012). The males who are most influenced by these portrayals are predisposed to sexual aggression, and violent content is often mixed with pornographic content (Wright et al., 2012). Longitudinal studies found that Dutch youth who exposed themselves more often to sexually explicit content had more uncertainty about their sexuality, more positive attitudes about casual sex, and were more likely to perceive women as sex objects (Peter & Valkenburg, 2008, 2009).

In an ethnographic study of online teen chat room discussions among anonymous users, Subrahmanyam et al. (2006) found that sexualized nicknames (e.g., RomancBab4U), an expression of identity, were found for approximately 20% of participants. Sexual themes occurred in about 5% of utterances, or at a rate of about one utterance per minute. Those who presented themselves as male engaged in more explicit sexual utterances whereas those who presented themselves as females engaged in more implicit sexual utterances. Although this was a teen chat room, participants reported that their ages ranged from 10 to 24 years, with more explicit and obscene comments made by those who reported being 18 to 24 than those who reported being 10 to 17 years of age. Those who were in a chat room monitored by an adult made fewer explicit sexual or obscene comments than those in an unmonitored chat room, but younger females were also more likely to participate in the monitored rather than the unmonitored chat room (Subrahmanyam et al., 2006), suggesting that girls are more likely to select a protected space from boys when online. Pairing off strategies, in which participants engaged in cyber pick ups by making a sexualized advance with a request to leave a public conversation for a private one, also occur online, which often result in a sexually intimate verbal exchange called “tiny sex” between the pair (Turkle, 1997).

Faster Internet speeds allowed visual as well as verbal communications about sex. *Sexing* involves sending or receiving nude or seminude photos or sexually explicit messages through mobile phones or the Internet in emails or social networking sites (Dake et al., 2012). Sexing takes place in three main ways: between romantic couples; distribution of pictures with others outside of a couple’s relationship, which sometimes takes place after an argument between the couple; and between two people in which

at least one person is hoping for a sexual relationship to develop (Lenhart, 2009).

About 4% of 12- to 17-year-old youth reported that they sent and 15% reported receiving a sexually explicit picture on their mobile phones, with older youth reporting more sexting than younger ones (Lenhart, 2009). The National Campaign to Prevent Teen and Unplanned Pregnancies (2010) found that 51% of 13- to 19-year-old girls felt pressured by boys, but only 18% of adolescent boys felt pressured by girls, to send sexts of themselves. Sexing is also associated with risky behaviors, such as more unprotected sexual intercourse, substance abuse, and emotional issues, such as attempted suicide or forced intercourse (Dake et al., 2012).

In summary, access to sexual content is widely available, particularly online where content and activities are less regulated. Adolescents often seek out sexual content, some of which is generated and is distributed by them. These experiences influence adolescents’ beliefs and feelings about sexuality and can put them at risk in their sexual interactions with others.

### **FROM OUTDOOR TO INDOOR ENVIRONMENTS: THE OBESITY EPIDEMIC**

Within the United States, overweight and obesity rates tripled over the past three decades to 21% of 2- to 5-year-olds, 36% of 6- to 11-year-olds, and 34% of 12- to 19-year-olds, with rates particularly high among Latino/a American boys and African American girls (IOM, 2006; U.S. Centers for Disease Control and Prevention, 2012). Increases in overweight and obesity issues are associated with health-related problems, including Type 2 diabetes, heart disease, stroke, and cancer (IOM, 2006), which forecasts long-term health issues for children throughout their lives.

The everyday environments of children are saturated with exposure to unhealthy foods, delivered in part through media (IOM, 2006, 2012). Television advertising reaches millions of children daily, and 1.2 million children visit food websites each month (J. Harris, Speers, Schwartz, & Brownell, 2012). In 2009, food marketers spent \$1.79 billion to market to children Ages 2 to 17, a 19.5% drop, adjusted for inflation, from 2006 marketing expenditures (FTC, 2012a). This cost is lower, in part, because marketers decreased their television advertising buys by 19.5% while expanding their marketing presence by 50% in newer media, such as the Internet, mobile phones, and viral



marketing (FTC, 2012a). Online marketing costs less than television advertising does, thereby making it more cost effective (Calvert, 2008a).

Energy balance involves taking in the same number of calories as those that are expended to maintain the same weight (Calvert, Bond, et al., 2014). One risk factor for obesity involves increased exposure and subsequent intake of high caloric foods that are low in nutritional value, much of which is marketed at children through television advertising (IOM, 2006). Another risk factor involves decreased physical activity because of a shift from outdoor activities to sedentary indoor media activities (Calvert, Bond, et al., 2014). These two pathways to obesity are not mutually exclusive, as the shift to indoor activities also increases the probability that youth will be exposed to television advertisements.

### The Content of Food and Beverage Advertisements

Using the U.S. Department of Health and Human Services formula in which foods are classified as Whoa (to be consumed only once in a while or for a special occasion; e.g., sweetened breakfast cereals), Slow (of moderate nutritional value to be consumed sometimes; e.g., sports drinks), and Go (to be consumed anytime; e.g., apples), Kunkel, McKinley, and Wright (2009) evaluated the foods and beverages in television advertising on 139 children's programs that were broadcast on CBS, NBC, ABC, CW, FOX, Nickelodeon, and Cartoon Network. Results indicated that the Whoa category of foods was far more prevalent (68.5%) than either the Slow (31%), or Go (<1%) categories. The use of popular, licensed characters to advertise to children, such as SpongeBob from *SpongeBob SquarePants*, also doubled from 2005 to 2009 (Kunkel et al., 2009). Content analyses of children's favorite websites and food websites documented extensive marketing of unhealthy foods to children, including the use of advergames (i.e., games that are intended to advertise) to attract children (Alvy & Calvert, 2008; J. Harris et al., 2012; Weber, Story, & Harnack, 2006).

### Energy Intake: Media Influences on Children's Diets and Health Outcomes

In a comprehensive analysis of studies conducted on the foods and beverages that are marketed to children and youth, which primarily involved television advertising, researchers found that advertising influenced children's

food and beverage preferences, their immediate dietary consumption patterns, and was associated with long-term obesity problems (IOM, 2006). A causal connection between television advertising and obesity could not be drawn because ethical issues prevent experimental studies from being conducted that would deliberately make children overweight or obese. Therefore, the data were correlational. Even so, the data were consistent with the hypothesis that exposure to television advertising is one cause of overweight and obesity problems for children (IOM, 2006). Another review of the literature conducted in the United Kingdom reached a similar conclusion, linking children's exposure to television food advertising to pediatric obesity and overweight issues (see Hastings et al., 2003).

Not surprisingly, studies of online marketing yield similar findings to those reported in television advertising. For instance, 6-year-old children had more difficulty in discriminating advertisements depicted in simulated web pages than 10-year-old children did (Moondore, Blades, Oates, & Blumberg, 2009), just as they have problems in identifying television advertisements from the program content (Calvert, 1999). Similarly, 7- to 12-year-old children, particularly those who reported playing advergames in the past, were more likely to consume snacks of poor nutritional quality after playing advergames that promoted unhealthy foods, but ate more fruits and vegetables if they played an advergame that promoted consumption of healthy foods (J. Harris et al., 2012). Consistent with these findings, 9- and 10-year-old, low-income African American children were more likely to select and consume healthier snacks after playing an advergame in which their Pacman character was rewarded (gained points) for consuming healthier products and punished (lost points) for consuming unhealthy products when compared to peers who played the same advergame with the opposite reinforcement contingencies (Pempek & Calvert, 2009). The findings suggest that children select and consume nutritional or nonnutritional products that are marketed to them via advergames through the simple behavioral principles of vicarious rewards and punishments to their character, yet marketers overwhelmingly promote unhealthy foods online (Calvert, 2008a).

Motivational variables provide a window into how youth use technologies in ways that can lead to positive dietary behaviors. Those who eat breakfast have healthier diets and healthier weights than those who skip breakfast (Sjoberg, Hallberg, Hoglund, & Hulthen, 2003). To improve breakfast consumption, Byrne et al. (2012)

provided motivational incentives to children to eat breakfast through feedback given through children's virtual pets, who were accessed via mobile phones. When children received both positive and negative feedback from their virtual pet, they were twice as likely to eat breakfast as those who received only positive feedback from their pet or those who had no pet at all. In other words, a combination of positive and negative consequences provided maximum feedback and benefit to the child.

### Media-Related Caloric Expenditure

Energy expenditure comes from two main sources: (1) exercise activity thermogenesis, which is typically attributed to healthy lifestyles as it involves daily exercise; and (2) nonexercise activity thermogenesis, or NEAT, which is the most variable form of activity and a likely contributor to the obesity crisis, as obese youth sit about 2½ hours more per day than lean youth sit (Levine, Eberhardt, & Jensen, 1999; Levine, Vander, Hill, & Klesges, 2006). In obesity prevention, every step counts, from running to walking to get a glass of water (Fujiki, Kazakos, Puri, Buddhharaju, & Pavlidis, 2008; Levine, Baukol, & Pavlidis, 1999).

Theoretically, media use may lead to overweight and obesity issues by *displacing* more active nonmedia experiences with sedentary behaviors. Small or negligible correlations were found, however, between children's television viewing and video game play in relation to their physical activity as nonactive indoor activities, such as board games, were displaced (Vandewater, Bickham, & Lee, 2006). Nor are all media experiences sedentary. Lean-forward media, including mobile media as well as exergames, can provide opportunities for youth to get moving and to track their own energy expenditure through sensor-based technologies (Staiano & Calvert, 2011a, 2011b). Although simply keeping track of an activity yields a change toward positive, recommended choices and action (Kopp, 1988; Nelson, 1977), NEAT is particularly difficult to track. Small, unobtrusive sensor-based devices that sync wirelessly via bluetooth to mobile devices can monitor the number of calories expended during exercise, providing individualized feedback about users' everyday activities without the burden of self-report. This individualized, tailored feedback is far more effective for behavior change than nontailored alternatives (Vandelanotte & De Bourdeaudhuij, 2003). Sensor-based capabilities include monitoring for goal setting and game-like elements, including social play.

The term *self-monitoring* refers to activity tracking, often in conjunction with goal setting, for health-related behavior change. An example is a pedometer that can track every step taken. When linked with software, data gathered by sensors can be displayed graphically, charting energy expenditure over time (Consolvo, Klasnja, McDonald, & Landay, 2009; Staiano & Calvert, 2011a). However, self-monitoring alone does not produce long-term, sustainable change, in part due to boredom with receiving only raw feedback (Y. Lin & Landay, 2008).

Electronic games, on the other hand, can be extremely engaging (Lieberman, 2006), particularly when combined with social feedback from one's peers (Staiano, Abraham, & Calvert, 2013). Competition can increase motivation to play sensor-based games (Fujiki et al., 2008; Toscos, Faber, An, & Gandhi, 2006), particularly when compared to solitary play (J. Lin, Mamykina, Lindtner, Delajoux, & Strub, 2006). When compared to a nonplaying control group, however, cooperative exergame play at school was effective in producing actual weight loss in a low-income African American sample of obese and overweight adolescents, but competitive exergame play was not (Staiano et al., 2013), and motivation to play was also higher for the cooperative than the competitive exergame group (Staiano, Abraham, & Calvert, 2012). Because the competitive mobile game studies did not examine weight loss, it appears that cooperation may be a more viable approach for getting children to invest in game play that can lead to long-term physical benefits. However, not all exergame studies obtain weight loss, particularly when conducted for short periods of time at home (Baranowski et al., 2012; Maloney et al., 2012), suggesting the importance of lengthy treatments and social interactions with peers, particularly in school settings.

### Summary

In summary, the kind of media diet that children have is linked to the obesity crisis. Specifically, exposure to food advertising for high caloric, low nutrient foods is associated with overweight and obesity issues more so than the total amount of exposure to media. In addition, activity displacement appears to involve similar kinds of experiences (e.g., watching television rather than playing a video game) rather than television viewing displacing high-energy expenditure sports activities that are played outdoors. Exergames and virtual play with mobile phone games in which children have to move can lead to caloric expenditure and even weight loss, particularly when cooperation is involved. However, mobile phones are not

allowed in many school systems, and exergame play does not always lead to weight loss.

### **RISKY MEDIA ENVIRONMENTS: ALCOHOL, TOBACCO, AND ILLEGAL DRUGS**

Alcohol, tobacco, and drugs are portrayed and used in varying degrees by artists across diverse kinds of media (Borzekowski & Strasburger, 2008). While regulation of substance use occurs during advertising on television, the stories themselves often embed characters engaging in the use of alcohol and tobacco, thereby providing ample opportunities for youth to observe and potentially imitate behaviors that can be risky for them.

#### **The Content: Exposure to Risky Behaviors**

Both tobacco and alcoholic beverage consumption is prevalent in most media and is generally treated favorably in media depictions (Borzekowski & Strasburger, 2008), with popular media characters involved in drinking alcohol and smoking tobacco. Consequently, role models are being presented who act in ways that could be harmful to child and adolescent health outcomes. Although illicit drug use is presented in movies, it is less likely to be presented in television programs, and when it is, illicit drug use is generally presented unfavorably, which could potentially discourage participation in illegal drug use (Roberts & Christenson, 2000). Video games rarely portray any kind of substance abuse (Haninger & Thompson, 2004). Nevertheless, media role models are plentiful for children to observe and potentially to imitate for all three classes of substance abuse.

#### **Influences of Exposure to Alcohol, Tobacco, and Illegal Drugs on Children**

According to Heatherton and Sargent (2009), adolescents who view movies with characters who smoke are 3 times as likely to try smoking. These conclusions are based on numerous large-scale surveys that use multiple statistical controls, some with longitudinal follow-ups. Both the onset of smoking tobacco (Hanewinkel & Sargent, 2008; Sargent et al., 2001; Sargent et al., 2005) and drinking alcohol (Hanewinkel & Sargent, 2009; Sargent, Wills, Stoolmiller, Gibson, & Gibbons, 2006) increased for U.S. and German youth who had viewed film portrayals where these behaviors had been modeled. Parents who monitored their 9- to 12-year-old children's viewing of movies with

a restricted (R) rating were less likely to try smoking cigarettes or drinking alcohol than those whose parents did not monitor them, suggesting protective factors when parents limit their children's exposure to media content that demonstrates risky behaviors (Dalton et al., 2006).

Adolescents' attitudes about smoking tobacco are influenced by whether their favorite stars smoke (Heatherton & Sargent, 2009). In one longitudinal study (Distefan, Pierce, & Gilpin, 2004), 12- to 15-year-old adolescents who had never smoked named their favorite movie stars. A sample of movies for a 3-year period was also examined for the smoking behaviors of their top 10 favorite stars, tallied separately for boys and girls. One third of the sample group who selected a star who smoked in the movies became smokers, an outcome that was stronger for adolescent girls than for adolescent boys. African American girls were less likely to name a favorite movie star that smoked than were other youth, and content analyses documented that the favorite actors of African Americans girls generally did not smoke onscreen. These findings can be interpreted within social cognitive theory, as role models are more likely to be imitated (Bandura, 1986).

In a survey of marijuana and alcohol use among high school students ( $N = 1,211$ ) from blue-collar neighborhoods, Primack, Kraemer, Fine, and Dalton (2009) found that those who listened to more music were more likely to smoke marijuana, while those who attended more movies were more likely to drink alcoholic beverages. By contrast, those who read more books or played more video games were less likely to smoke marijuana or drink alcohol. The authors speculated that video game or book reading may remove youth from situations that lead to drug and alcohol abuse or reduce their exposure to other media that portray substance abuse.

In summary, the research consistently links exposure to media depictions of alcohol and tobacco with the onset of drinking and smoking among adolescent youth. The results are consistent with decreased inhibitions to smoke and to imitation of role models, as would be predicted by social cognitive theory. Although a variety of statistical controls are used in analyses, the major weakness in this literature is that the studies are correlational in design, thereby limiting inferences about causality. However, experimental studies are not possible because of ethical issues.

### **MEDIA POLICY**

Numerous professional organizations and government entities, including the U.S. Congress, have advanced and

implemented media policies. Most policies involve ways to address the influences of exposure that is deemed to be harmful to children, such as sex and violence. The First Amendment, guaranteeing freedom of speech, is integral to how U.S. policies are created and implemented (Calvert, 1999).

### Early Media Exposure

The American Academy of Pediatrics (AAP) has advanced policies to prevent or reduce children's exposure to media. In particular, parents are discouraged from letting their children be exposed to screen media prior to Age 2 (AAP, 1999, 2011), to limit screen exposure to no more than 2 hours per day for children over Age 2 (AAP, 2001a), and to have no television sets in children's bedrooms (AAP, 1999, 2001a, 2011). The AAP (2011) also recommended that pediatricians encourage parents to read to their toddlers to promote literacy and cognitive skills. These recommendations were designed to prevent excessive exposure to violence, to improve sleep, and to improve cognitive skills (Evans Schmidt, Bickham, Branner, & Rich, 2008). Such policies make clear that the AAP favors traditional over screen-based learning.

### The V-Chip

The Federal Communications Commission (FCC) has set forth policies to assist parents in controlling the kind of content that their children view. One involves the V-Chip, which is a computer chip installed in television sets that have picture screens 13 inches or larger. Television program ratings, which came into being as a result of the Telecommunications Act of 1996 (Iannotta, 2008), are used to program the V-Chip to block content. One set of television program ratings is based on content: *S* represents sexual content, *D* represents suggestive dialogue, *L* represents profane language, *V* represents violence, and *FV* represents Fantasy Violence, although very few parents use the V-Chip because it is difficult to program (Jordan, 2003).

### Media Violence

The American Psychological Association (1996, 2005) recommended a reduction in violent television and videogame content and the use of technologies, such as the V-Chip, that would enable viewers (or their parents) to control or

eliminate youth exposure to media violence. The American Academy of Pediatrics (2001b) targeted media violence presented via television, movies, video games, and music as a risk factor to children's health and argued for a change in children's media environments. Their recommendations included what is being broadcast, parental supervision of children's media exposure, and children's participation in media literacy programs. To reduce the impact of violent content on children's behaviors, the American Academy of Child and Adolescent Psychiatry (2002) recommended that parents reduce their children's exposure to television, consider removing a television set from their children's bedrooms, and refuse to let their children view violent television programs.

### Regulating Sexual Content

The FCC regulates commercial television programs with sexual content and pay services like dialing for pornography, but the FCC has limited jurisdiction over cable programs, as cable operates over private, not public, airwaves (FCC, 2000; Iannotta, 2008). In addition, any regulation of sexual content presented on the Internet is difficult, if not impossible, to enforce due to the international reach of the content provided online (Thornburgh & Lin, 2002).

A National Academies committee led by Thornburg and Lin (2002) presented a range of technological tools, legal approaches, and social and educational strategies that could be implemented to protect children and youth from sexually explicit online content. At a technological level, *filters* that prevent access and *surveillance* software that tracks behavior were recommended as ways to prevent minors from accessing sexually explicit online content. At a legal level, the committee recommended that child pornography laws continue to be aggressively prosecuted and that law enforcement officials systematically enforce existing obscenity laws, which were not being prosecuted on a frequent basis at the time of the report. Educational and social strategies, such as school media literacy programs were recommended, as children's education was deemed essential to instill ethics of responsible choice and to teach children to use technological tools to implement those choices.

One issue that arose during the National Academies committee's report involved the distribution of materials through peer-to-peer file sharing, in which one minor sent a sexually explicit picture to another (Thornburgh & Lin, 2002). This area was viewed as one that would be particularly difficult to address, which indeed has occurred



with online activities such as sexting. Although no federal laws apply to sexting behaviors among minors (Dilberto & Matthey, 2009), state laws have been used to prosecute minors who sext (Dake et al., 2012). Because sexting is technically the production and distribution of child pornography (Lenhart, 2009), minors who are found guilty of sexting have been subject to possible prison sentences or being registered as a sex offender (Dake et al., 2012). The American Psychological Association (2008) recommended that steps be taken to prevent the sexualization of girls, and teaching girls to value themselves for who they are rather than how they look. The sexualization of girls creates an environment that is conducive to activities like sexting (Dake et al., 2012).

Internet applications like Snapchat now reduce the possibility of distributing sexting materials past the intended recipient. Snapchat allows images to be transmitted for 10 seconds or less, as determined by the sender, after which the message is destroyed. This peer-to-peer file sharing application enables youth to transmit sexts to one another with less fear of prosecution or loss of control of the distribution of the images. Nonetheless, the onscreen images can be captured if the recipient is quick, in which case the sender is immediately notified (<http://www.snapchat.com/#What-is-snapchat>).

### **The Commercialization of Childhood**

U.S. children live in a highly commercialized environment. The American Psychological Association, the American Medical Association, and the American Academy of Pediatrics have called for the elimination of, or restrictions in, advertisements directed at children under Age 8, as they are deceptive and unfair (Evans Schmidt et al., 2008). These kinds of advertising restrictions have already occurred in other countries such as Australia, Canada, Great Britain, and Sweden (American Psychological Association, 2004). The use of media characters in children's marketing has also been controversial, such as when the characters become part of product-based programs or program-length commercials, in which the intent of the program is to sell toys (Federal Communications Commission, 1974). There have been similar arguments to restrict or eliminate the use of media characters beyond the screen for commercial purposes (Linn, 2004), but policies have not been put into place, in part because toy revenue pays for the creation of programs in the United States (Cahn, Kaligan, & Lyon, 2008) and because of the First Amendment. Youth also create and post online videos about their favorite

products on websites like youtube.com, transforming them into active consumers who generate advertising content (Montgomery, 2012).

### ***Tobacco and Alcohol Advertising***

Efforts to restrict television tobacco advertising have been effective. In 1971, The FCC banned tobacco advertisements from television because of potential health hazards (Aufderheide, 1990). The American Medical Association recommended a ban on all tobacco advertising, as tobacco advertisements are still available in other media, such as magazines and online venues (Evans Schmidt et al., 2008). Advertisements for hard liquor also disappeared from television commercials due to a voluntary agreement with the liquor industry, although beer commercials are still abundant, particularly during sports programs (Evans Schmidt et al., 2008). Smokers and drinkers continue to appear in television programs, perhaps creating an even more effective approach for marketing than traditional advertising, as popular characters are smoking and drinking, and these behaviors are not being labeled as potentially dangerous.

### ***Food Marketing***

The products advertised to children have been linked to pediatric health issues, specifically becoming overweight and obese. Based on an evidentiary review of the literature, an Institute of Medicine (2006) committee made ten recommendations, such as food marketers should use their resources to market healthy foods and beverages to children and youth. Dr. J. Michael McGinnis (2008), who chaired the 2006 IOM committee, testified before Congress, finding little progress in the implementation of the ten recommendations. The lack of progress was occurring not just on the industry side, but also on the government end.

### ***Privacy***

The tracking of online youth has been an ongoing privacy concern, as numerous companies track what children are doing online, and use targeted marketing in which online advertisements appear based on the specific interests and preferences of their participants. The 1998 Children's Online Privacy Protection Act (COPPA) gave the Federal Trade Commission (FTC), who regulates interstate commerce in the United States, the authority to create rules that would restrict commercial websites from collecting personally identifying information about minors who are under the age of 13 (Montgomery, 2012). The FTC updated the COPPA policy with amendments that make companies

seek parental permission to capture children's pictures, videos, and geographical location, which are now possible through social networking sites, and added mobile phones, tablets, and online games to the media that had to follow the rules (FTC, 2012b).

### Driving Hazards

In 2012, 39 U.S. states had laws prohibiting texting while driving, and 10 states banned handheld mobile phone use while driving (Governors Highway Safety Association, 2012). With car crashes as the leading cause of adolescent death, a 2012 television media campaign also created the catchy phrase of a "designated texter" to keep the driver focused on the task of driving the car (Halsey, 2012).

### The Children's Television Act

The Children's Television Act is consistent with policies made by health organizations to improve children's well-being through legislation that supports high quality children's television programs (Evans Schmidt et al., 2008). The AAP advises parents to show only educational television programs, which includes prosocial programs (Evans Schmidt et al., 2008). With changes in television to the digital spectrum, the FCC retained the original requirements of the CTA, but created additional guidelines for multicasting, advertising, and website labeling (Calvert, 2008b; Hill-Scott, 2012). In particular, not more than 50% of the E/I programs broadcast can be repeated during a given week on a particular channel, children's websites must be intended for noncommercial use and the primary website content must be related to the program, and the rules of character use and selling by the program host were updated (Hill-Scott, 2012).

## CONCLUSIONS

Electronic media have been with us for less than a century, but in that short window of time they have become integrated into the fabric of our children's lives. While some parents fear that digital media will be detrimental to their children's development, others fear their children will be left behind without it. Perhaps there is a measure of truth in both visions.

Electronic media are ubiquitous, and they are here to stay. Media range in size from very, very large home

theaters to very small, mobile smartphones that connect children to each other and to the world around them. Wearable devices, such as smart watches, are now beginning to enter the marketplace (though the character Dick Tracy wore one many, many years ago).

The content is not changing, nor are the developmental issues that children face, but increasingly media are seamlessly integrated across both real and virtual life experiences. For example, children can look out of their Google glasses that allow a window into an electronic web of information, which is enmeshed within their current individualized environment. Alternatively, children's images, actions, and settings can now be embedded in some of the apps and video games that they play. What will reality mean for children as the lines between face-to-face and virtual experiences are increasingly blurred?

Media researchers are challenged to keep pace with this rapidly shifting array of platforms, allowing various affordances to content access, creation, and distribution, and to respond to requests about policy issues. Early development already occurs in a context in which media characters traverse time and space, from the screen to the toy store to the grocery store. Older children increasingly control their own media environments, with relatively little regulation by their parents. In the midst of these changes, some things remain constant. Observational media will ever be a part of our children's lives. Children like to watch, and the stories of others fascinate them. To what extent will children be able to enter those stories in the future, creating their own plots and representing their unique life stories? Who will our children's friends be? For example, what will a social relationship mean as intelligent agents and robots look and increasingly act more as human beings who are children's special friends, able to respond to each one in highly personal ways? Will children prefer these virtual friends to their more difficult real-life ones? Will children forsake their privacy for the ease of gaining quick access to products that they like? Will privacy even be possible in the future, as tracking software increasingly follows children everywhere they go?

With the exception of the Children's Television Act, rarely do policies take advantage of the enormous potential of media to promote constructive behaviors, such as altruism. Instead, most policies focus on problematic issues, such as reducing children's exposure to sex, violence, and advertising, with some policies recommending restricted access to any kind of electronic media. Ideally, media policy should follow research, not precede it. Yet urgent social issues sometimes drive quick policy decisions

instead of policies emerging after a careful, deliberative research process. Even when media policies are grounded in research, the First Amendment prevents many of them from having the kind of teeth in the United States that would be required to make a meaningful difference.

As our media landscape rapidly changes, one thing is certain: Media platforms will continue to evolve. As digital natives, children accept these changes as inevitable (Prensky, 2001), ever willing to explore and to help develop the newest digital innovation. Each successive generation now leaves a unique digital footprint behind them. The question for us is whether we have the vision to leave a digital footprint worthy of our children's futures.

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## CHAPTER 11

# Children in Diverse Social Contexts

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## INTRODUCTION

Children's development does not occur in isolation. Children grow up in families with cultural backgrounds and beliefs, and in families with varying financial resources

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and social capital. They reside in communities and neighborhoods that are homogeneous or diverse, with varying levels of resources and risks. A full understanding of development cannot be gained without careful consideration of the processes through which context and development are co-constructed. This chapter synthesizes theory and research that explain how context influences children's development. Specific consideration is given to mechanisms through which social position (race/ethnicity) and social stratification (income level or poverty) are

associated with fundamental processes in development. We begin by summarizing theoretical frameworks and describing models that guided our review.

### **Linking Contextual Theories and Developmental Models to Study of Child Development**

After decades of developmental theory grounded in mechanistic and organismic worldviews that minimized or ignored the contextual influences on development (Lerner, 1986; Parke, 2004), Bronfenbrenner's ecological theory (1974, 1977, 1986) advanced the inclusion of context in the study of human development. This model contends that human life is inextricably linked with and infused into multiple interlocking contextual systems. Thus, individuals' capacities and developmental outcomes are products of the dynamic relational interactions that occur within these systems. To further explicate how developmental systems influence development, Bronfenbrenner and Morris (1998) synthesized and expanded the original ecological model and included biology, culture, and chronological/historical time as dynamic features of the human development system—thus evolved the bioecological model of human development. In this model individuals are characterized as active agents in their environment with capacities to influence, as well as be influenced through social interactions that are embedded in their context. Social interactions, therefore, are the processes that “make human beings human” (Bronfenbrenner, 2005). Applying the conceptualization of human development to child, one would focus on processes through which an individual's developmental systems and dynamic interactions with others, promote or inhibit mental health, literacy, intellectual growth, educational attainment and other dimensions of development (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006).

Later advancement in the scholarship of human development and systems theories sought to explain the contributions of social relationships and human dynamic systems to human development over the life span (Lerner, 2002; Overton, 1998). This advancement highlighted the processes through which relational interactions facilitate developmental changes. Relational processes are characterized as reciprocal, mutually influential interactions that occur among an individual's biological, psychological, and proximal social relational level systems (e.g., parent-child, siblings, and peers). Developmental systems not only are influenced by social relations but are also influenced by multiple systems that are structurally and functionally integrated and embedded in history and sociocultural systems,

including educational, public policy, governmental, and economic systems. Variability in an individual's development is attributed to human interactions in her/his environmental settings (Spencer, 2006). As active agents, humans have the capacity to engage in behaviors to shape social interactions and change the directional influence of environmental settings in ways that affect subsequent development (Lerner, 1982). Thus, developmental change is produced and is a product of linkages among a child, her/his family, community, and society; any change in one system spills over to affect changes in other ecological contextual systems (Lerner, 1986; Lerner, Peterson, & Brooks-Gunn, 1991). For some, the nature of individual-context relations is met with numerous environmental, social, political, and economic challenges that influence the course of their growth and development. This circumstance is of particular importance in understanding the developmental trajectories of racial and ethnic minority children, and of children growing up in poverty or isolated rural communities. Development for these children, for example, is more likely to be influenced by their social positions and social stratification than for children growing up in other contexts.

Another contribution of the developmental relational system theory is its ability to explain how race, ethnicity, gender, sexual orientation, and national and cultural settings influence the course of development (Castellino, Lerner, Lerner, & von Eye, 1998). As Lerner (1998) notes, human response to “diversity is the exemplar of the presence of relative plasticity in development” (p. 904). Differential responses to challenging environment and the feedback that humans receive have significant effects on positive and negative developmental change. The fact that diversity is included as a core component of ongoing interactions between people and their multiple embedded contexts further suggests how significant the contribution of social position and social stratification is for the developmental trajectories of some groups of children growing up in the United States. This proposition has been posited by García Coll et al. (1996). Their model demonstrates how critical aspects of some children's environment are profoundly influenced by racism, prejudice, discrimination, oppression, and segregation. García Coll (1996) and colleagues urge scholars studying child development to consider ways in which developmental outcomes are influenced by social stratification and its derivatives. Specifically, race, ethnicity, and social class are core rather than peripheral contextual processes in the development of children who are marginalized because of social position and social stratification. Further, when these constructs are



omitted from developmental theories and research, their beneficial impact on youth in more advantaged contexts are missed. Contexts provide both synergies of advantage and disadvantage. The primary purpose of this chapter is to draw attention to and integrate knowledge on contextual factors for a more holistic understanding of normative development. We focused on the following two questions: (1) How have researchers studied the development of marginalized children? (2) To what extent have social positions and social stratification been conceptualized as fundamental to developmental systems of marginalized children?

### Organization and Scope of Chapter

This chapter synthesizes extant studies that have examined ways in which race/ethnicity, socioeconomic status, geographic residence, immigration status, and family formation status (e.g., transracial adoption) are associated with both normative (e.g., social emotional well-being, academic aspiration, prosocial friendships) and nonnormative (e.g., externalizing behaviors, high risk behaviors, school dropout) child development. It identifies methodological and theoretical strengths and weaknesses of extant studies and provides recommendations to advance future studies of child development in diverse contexts.

Before beginning our analysis of the extant literature, we clarify major concepts and terminology. Specifically, we provide an analysis and clarity regarding race and ethnicity, as these two concepts have been used in the field of human development in studies examining the role of diversity in child development. Following this discussion, we provide an overview of the changing demographics of families and children in the United States. Finally, we synthesize extant studies of child development based on social positions and social stratification. To the extent possible, we identify ways in which these factors are interlocked with contextual processes to explain individual differences in mental health, literacy, intellectual growth, educational attainment, and other dimensions of development (Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006).

### IMPLICATION OF RACE AND ETHNICITY IN STUDIES OF CHILD DEVELOPMENT

The term *race* is often used to group people based on presumed genetic, biological, or physical similarities (S. Graham, Taylor, & Ho, 2009). Genetically, humans

are 99% identical and the use of the term *race* to categorize groups of individuals is not scientifically supported (Bonham, Warshauer-Baker, & Collins, 2005). There are, however, variations in DNA mapping that can be used to determine the extent to which individuals have ancestors who are African, European, East Asian, Native American, or from the Pacific Islands. This information is only beneficial in identifying groups of individuals if certain sampling criteria are met, such as homogeneity of people from the geographic location and geographic homogeneity of the individual (Rich, Burchard, Ziv, & Tang, 2002; Rosenberg et al., 2002). Despite the controversy and ambiguity that definitions of race evoke, the use of biological definitions and society's construction of the meaning of race based on boundaries between racial groups remains.

Generally, ethnicity is used to reflect the heterogeneity within cultural groups. For example, in the United States, ethnicity is used to describe Latino/a Americans who represent many races and are therefore distinguished by ethnicity (e.g., Puerto Rican, Dominican, Columbian), which is an accurate representation of this subpopulation. While the United States Census Bureau (2010) recognizes the ethnic background of Latin/Hispanic Americans, it does not recognize the ethnic backgrounds of other racial groups, such as Black/African Americans or Asian Americans. For these groups, the word *ethnicity* is often used as a euphemism for *race* when referring to non-Latino/a Americans. This conceptualization is largely incorrect. Individuals from the African diaspora include many ethnic backgrounds (African American, Haitian, African, etc.). Further, Asian Americans, as an ethnic minority group, are quite heterogeneous with over 20 subgroups (Chinese, Japanese, Filipino, Korean, etc.)—each with unique linguistic, cultural, and sociodemographic backgrounds, as well as immigration histories in the United States (Sue & Morishima, 1982). Because research scholars often ignore ethnicity within race for Asians (e.g., Chinese Americans), African (e.g., Caribbean Americans), and European Americans (e.g., Irish Americans), this incorrect perspective impedes the study of important contextual variations in children's development and socialization.

While the fields of sociology, anthropology, psychology, demography, and human development are replete with discussions about the complexities associated with conceptualizing and operationalizing race and ethnicity, studies of children of color historically presumed that it is possible to capture the experiences of these children in collective categories of non-European American individuals residing in the United States. We acknowledge that using

both ethnicity and racial group membership in broad labels dilute and obscure moderating effects of national origin, immigration history, religion, and traditions on normative and maladaptive development (Lin & Kelsey, 2000; Mio, Trimble, Arredondo, Cheatham, & Sue, 1999). We also recognize that visible phenotype characteristics, often driven by race and ethnicity, along with social economic status, inform and influence the experiences of children, families, and communities of color. The legacy of racial discrimination remains because biologically driven phenotypic characteristics continue to elicit unique experiences for the majority of children of color. For example, African Americans and Latino/a Americans are more likely to be profiled based on phenotypic characteristics, subjected to race-ethnic related negative reactions from European Americans, and exposed to parenting processes uniquely designed to teach them how to cope with demands of a society that devalues their heritage, race, and culture (Coard, Wallace, Stevenson, & Brotman, 2004; McAdoo, 1992; Murry, Berkel, Brody, Gerrard, & Gibbons, 2007). The social, economic, political, and environmental realities of these children suggest the need for careful consideration of ways in which being a member of a *minority racial group*, or being a *child of color*, influences development apart from and in addition to the cultural implication of their ethnicity (Harrison & Thomas, 2009).

In addition to addressing in this chapter race-related consequences for child development, we also consider ways in which classism fosters specific ecological circumstances that explain child development (Evans, Fuller-Rowell, & Doan, 2012). In sum, given the implications of physical characteristics, language, and immigration status for subpopulations of individuals residing in the United States, we are of the opinion that there is a need to maintain distinct conceptualization of race and ethnicity. These labels shape and influence ecological systems and context relations of children in certain social positions (Hill, 2006; Hill, Murry, & Anderson, 2005). Whereas these issues have been apparent for understanding development of ethnic minority children, they are increasingly deemed more normative as the United States population becomes more diverse and the field of human development becomes more globalized.

## DIVERSITY EXPLOSION: DEMOGRAPHIC SHIFTS IN THE UNITED STATES

Highly noted in the United States at the dawn of the new millennium is “an explosion of diversity” in every state

across the United States (Fry & Passel, 2009). Given these demographic changes in U.S. society, Prewitt (2013) recommends the elimination of the term *race* because the diversity explosion in United States has facilitated an emergence of a *hybrid America* that includes peoples of many nationalities, ethnicities, and cultures (Prewitt, 2013). Several patterns have been associated with the drastic population shift. The number of immigrants in the United States reached a record 40 million in 2010. Consequently, based on the census count, one out of every three Americans is a person of color (U.S. Census Bureau, 2010).

Dramatic changes in fertility patterns in the United States have also been associated with the majority/minority population shift (Passel, Livingston, & Cohn, 2012). Prior to 2000, non-Latino/a American European Americans (i.e., non-Hispanic Whites) accounted for nearly 66% of all births; followed by African Americans, representing 17% and Latino/a American representing approximately 15% of all births in the United States. By 2008, non-Latino/a American European American births dropped to approximately half of all births, with concomitant increases observed in the number of births to Latina American mothers, accounting for 26% of all births, compared to 16% of births to African American mothers (Hamilton, Martin, & Ventura, 2011). Further, since 2009, childbirths have been higher among Latina American mothers than European Americans and African Americans, averaging 2.99 versus 1.87 and 2.3, respectively.

## Projected Population Shifts

Dramatic demographic shifts in the United States have resulted in a booming population of youth in, what has been characterized as the “vanguard of America’s new racial and ethnic diversity” (K. M. Johnson & Lichter, 2010, p. 151). The number of minority children in the United States increased by 15.5% between 2000 and 2008. Of the 73.9 million children in the United States, Latino/a Americans accounted for 3.9 million, an 80% increase from 2000 to 2008. The largest minority group in the United States is Latino/a American, a position historically held by African Americans (U.S. Census, 2010). Demographers contend that if the shrinking population patterns of non-Latino/a European Americans in this country continue, by the middle of this century, non-Hispanic European Americans will cease to be a majority population in the United States (Lichter, Parisi, Taquino, & Grice, 2010). These changing demographics of U.S. society shape, challenge, and complicate the lives of children and families that have been

traditionally marginalized (Hernandez & Cervantes, 2011). The rapid increase in ethnic diversity is not represented across the range of sociodemographic backgrounds. There is a growing economic divide that is confounded with racial/ethnic diversity.

### Social Stratification

In addition to ethnic or racial background, social stratification drives opportunities and developmental outcomes for children. The patterns and pathways of impacts of social stratification across socioeconomic status (SES), geographic residence, and rural/urban context are well documented (García Coll et al., 1996). Further, their impacts are not equally felt across racial and ethnic background. There are additive and multiplicative impacts of race, ethnicity, poverty, and wealth on the life chances of children. Each is described below.

### Socioeconomic Status

A well-documented phenomenon is that on most social indicators, children of color fare less well than their non-Latino/a American European American counterparts (Duncan, Magnuson, and Votruba-Drzal, Chapter 14, this *Handbook*, this volume). Among children of color, 16.4 million are poor and of those, 7.4 million are growing up in extreme, concentrated, persistent poverty (U.S. Census Bureau, 2010). Unprecedented levels of income and wealth inequality create challenges that take a toll on the families and their children. African American and Latino/a American children are more likely to be raised in families with incomes less than half the poverty threshold than non-minority children who are poor (Child Trends Data Bank, 2014). Low-income children live in noisier, more crowded, and low-quality housing than do their middle-income counterparts, and experience more psychosocial stressors, such as elevated family turmoil, greater child-family separation, and higher levels of violence (Brooks-Gunn & Duncan, 1997; Evans & English, 2002; McLoyd, 1998). Moreover, children of color are coming of age during a period of equity disparities in a society with heightened intolerance for diversity, increasing the likelihood of exposure to discrimination (Cauce, Cruz, Corona, & Conger, 2011). The combination of racism, classism, and geographic isolation will greatly affect their development.

### Geographic Residence

Research on poverty and child development, with few exceptions (Brody et al., 2005; Burchinal, Vernon-Feagans,

& Cox, 2008; Murry, Berkel, Brody, Miller, & Chen, 2009), has been limited by focusing primarily on urban youth. The need to consider how poverty impacts rural children is of great concern because poverty is becoming less geographically concentrated in inner city neighborhoods (Jargowsky & Yang, 2006; Kingsley & Pettis, 2003). Concentrated poverty in rural America is more extreme than what is observed in urban areas. Population trend data shows that rural children of color are not only more likely to be poor but are also more likely to be living in situations characterized as persistent, “deep poverty.” Rural environments often lack structural resources that are often available to families in urban settings (Proctor & Dalaker, 2003). Consequently, family members of rural children must deal with a restricted range of employment, great distances to businesses and services, limited public transportation, and lack of recreational facilities for children (Murry et al., 2009). In addition, families living in rural environments have fewer educational opportunities than do their urban counterparts (Fan & Chen, 1999; Witherspoon & Ennett, 2011), and most jobs available to rural African Americans are labor intensive and pay low wages (Brody et al., 2005). The strain of such demanding work depletes families’ time and energy resources; this, in turn, can occasion psychological distress that may compromise parenting (Brody & Flor, 1997).

### Changing Faces of Poverty and Rurality

The faces of children in rural poverty are different from their urban counterparts. One stark difference between rural and urban poor children is that rural poor children are more likely to be European American. More than half of all poor rural children are non-Latino/a American European American compared to approximately 25% of poor urban non-Latino/a American European American children (Lichter, Qian, & Crowley, 2005). While poverty has similarly devastating consequences for rural European American children’s development (Ali, McWhirter, & Chronister, 2005; Blum et al., 2000), European American children are seldom included in discussion linking poverty to developmental outcomes in children. Reasons for this omission may be attributed to the fact that terms such as *low-income*, *poverty*, and *rurality* have been, historically, used interchangeably with *race* and *ethnicity*. We include in our systematic review the few available studies on the social stratification and developmental outcomes of European American youth in a later section of our chapter.

While a major proportion of rural children are non-Latino/a American European American, the double

burden of disadvantage is more likely to be experienced by racial/ethnic families residing in rural communities (U.S. Census Bureau, 2005). In the next section, we continue our analysis of relevant theories and models that expand on our previous discussion and summarize extant studies that have examined the contributions individual-contexts on the developmental processes of children of color, those who are poor, and those residing in low-resource rural communities. Our analyses include studies that have considered both proximal and distal relational developmental systems that forecast both normative and nonnormative development of children in diverse context.

### PROTECTIVE NATURE OF CHILDREARING PRACTICES OF PARENTS OF DIVERSE CHILDREN

Whereas enculturation, acculturation, and ethnic socialization are nearly singularly applied to children and families of color, immigrant groups, and cultural minority groups, *all* children experience enculturation. Enculturation is developing competency in an identity with one's culture of origin (Gonzales, Knight, Morgan-Lopez, Saenz, & Sirotli, 2002). It is the normative socialization process through which children become functional members of their society (Farver, Xu, Bhadha, Narang, & Lieber, 2007), the manner through which individuals learn the beliefs and practices of the culture in which they live and become an accepted and contributing member of the cultural group (Arnett, 1995; Gauvin & Parke, 2010). Children are born with the potential to fit into any culture and with the hope of seamlessly fitting into the culture in which they are embedded. In fact, human development itself is, in part, the process of learning and internalizing the ways of being, interacting, and knowing that an individual is represented in one's culture (Gauvin & Parke, 2010)—that is, socialization. Children's learning is driven in large part by a desire to fit into, function within, and feel comfortable within one's cultural setting (Fuller & García Coll, 2010; Lopez, Correa-Chavez, Rogoff, & Gutierrez, 2010). When children are studied only in one cultural context, some culturally embedded aspects of development and family dynamics are assumed to be "natural" or "universal." It is only when human development and family processes are studied in diverse contexts that true culturally embedded aspects emerge (Cole, 1996). Still, universal aspects of child development, including language, communication,

and the primacy of social relations, are the foundations upon which cultural competency and human development are established.

### Balancing Universal and Cultural-Specific Parenting

Parents and other family members are the primary sources of socialization and the filters through which messages of larger culture are affirmed, challenged, and interpreted. The essential goals of parenting include helping children internalize the values and behavioral standards of the family and the broader culture, equipping youth to become product members of a defined society or group, developing emotional well-being and emotional security (Hill, 2009). General tools or dimensions of parenting include behavioral control or demandingness, warmth, and responsiveness (Baumrind, 1971; Maccoby & Martin, 1983). However, the parenting styles that emerged from Baumrind's, as well as Maccoby and Martin's work (e.g., authoritative, authoritarian, and permissive) do not fully generalize beyond families from European American, middle-class backgrounds on which the research was originally based (Brody & Flor, 1998; Chao, 1994; E. Kim, Cain, & McCubbin, 2006; Mason, Walker-Barnes, Tu, Simons, & Martinez-Arrue, 2004). Although parents utilize a constellation of warmth, control, and responsiveness, one's cultural context defines the desired outcomes, standards, or goals that parents wish to develop. The appropriateness of particular parenting strategies, how parenting practices cohere, children's interpretations and reactions to said practices, and the effectiveness of parenting practices all play into a child's cultural context (Hill, 2006, 2009; Okagaki & Divecha, 1993).

Although cultural socialization is universal, it takes on a unique function for racial and ethnic minorities, as well as for immigrant youth and families, because the youth must be socialized into their ethnic or natal culture, into the dominant culture, and into an understanding and resolution of inconsistencies and conflicting viewpoints across cultures (Boykin, 1986; Farver et al., 2007; Knight et al., 2011). While parents struggle in adapting to two cultures themselves, they are also providing their children the skills and messages for functioning within two cultures and a lens through which to synthesize this dichotomy. Families who are straddling two cultures, either through immigration or ethnic minority status, are engaging in two simultaneous and integrated processes. Every child engages in the first process, as every child is a product of at least one culture. The process of gaining competence in a second



culture, however, is known as acculturation. The research on acculturation began in the early 20th century when new waves of immigrants were arriving in the United States and there were significant changes in the immigration laws and policies. As immigration has ebbed and flowed since then, as second and third generations have been born and raised in the United States and as an increasing number of immigrants are phenotypically distinguishable, there has been increased interest in understanding the process of acculturation and the risks and opportunities associated with it. Whereas the study of acculturation processes began in fields like sociology and anthropology, theory and research focused in individual level adjustment, preparation for discrimination, and identity development has been informed by the fields of psychology and area studies (e.g., African diaspora studies, Latino/a studies).

### ***Acculturation***

The concept of *acculturation* was first introduced by Park (1928) to describe the experiences of individuals who were part of the mass migrations of the early 20th century but, because of distinct phenotypic characteristics, could not assimilate. That is, because of skin tone, hair texture, or other characteristics, individuals would continue to be marked as “different” despite learning the language, values, and behaviors of the host culture. Definitions of acculturation have been fairly consistent since its early introduction. In the 1930s, it was defined as “those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact with subsequent changes in the original pattern of either or both cultures” (Redfield, Linton, & Herskovits, 1936, p. 149). Other definitions pertain to individual adjustments and changes that occur when one is immersed in a new culture (Berry, 1990; Cabassa, 2003). Most practically, this refers to learning and taking on the language, behaviors, and values of the new culture while maintaining some behaviors, language, and values of the culture of origin (Berry, 1990). Early conceptualizations represented acculturation as a single continuum, with assumption that greater immersion in and identity with the host culture was concomitant with a loss of one’s original cultural identity. However, empirical data has demonstrated that acculturation and the associated identity development is bidimensional and that orientation to the host or new culture is orthogonal to an orientation to the original culture (Berry, 2003). Bidimensional conceptualizations permitted an examination of bicultural identity development and integrative identities that fuse aspects of both cultures into a single coherent

identity (Berry, 2007; Knight, Jacobson, Gonzales, Roosa, & Saenz, 2008).

Still, even bidimensional conceptualizations miss essential experiences of those adapting to a new culture (de Haan, 2011). Such conceptualization presumes common patterns or processes across individuals as they traverse an assumed common pathway to adjustment to life in the United States (Farver et al., 2007). De Haan, however, describes a concept of *cultural translation* and argues that the process of exposure to a new culture entails transformational changes and synergies that change how both cultural systems are endorsed and expressed within individuals and families. Acculturation reflects a confrontation and translation of cultural spheres that results in changes in both, rather than a more static characterization of greater or lesser endorsement and internalization of existing cultural belief systems. “Translation cannot happen without changing the original meaning” of both cultures (de Haan, 2011, p. 380). Acculturation results in identities that are not just mono- or bicultural, but hybrid in influence and nature.

### ***Acculturation and Enculturation***

Acculturation and enculturation have become a focus of study in psychology and human development because the concepts have been associated with a wide range of developmental outcomes. In studies of bidimensional orientations, both strong American and ethnic identities are associated with better psychological adjustment. Those with bicultural orientations (high on both cultural orientations) reported the best developmental and mental health outcomes (Berry, 2003). Similarly, high ethnic cultural orientation was related to fewer mental health problems and greater family support (Dinh, Castro, Tein, & Kim, 2009). In contrast, youth with high American cultural orientations and low ethnic orientations were lower in religiosity, which was in turn associated with higher mental health problems (Dinh et al., 2009). Likewise, acculturation to the United States was associated with higher levels of conduct problems in part because teens’ acculturation was associated with higher levels of family conflict (Gonzales, Deardorff, Formoso, Barr, & Barrera, 2006).

Studies that conceptualize acculturation level by generational status also demonstrate that acculturating to the United States culture is not wholly healthy (Farver, Bakhtawar, & Narang, 2002). For example, first-generation Asian Indian immigrants have lower levels of depression and anxiety and higher levels of well-being than second generation Asian Indian youth. Relatedly, the second

generation youth report higher levels of conflict and lower self-esteem (Lay & Safdar, 2003). In addition, first generation Latin American youth hold higher aspirations for achievement, perceive fewer barriers to reaching their goals, and achieve at higher levels than their second- and later-generation counterparts (Hill, Ramirez, & Dumka, 2003; Hill & Torres, 2010). Some have attributed the decline in mental health across generation levels to acculturative stress and the difficulties in garnering resources and adjusting to a new culture (Barker, Cook, & Borrego, 2010; Cabassa, 2003). So prevalent are the declines between first and later generation immigrants in achievement, mental health, and behavioral outcomes that the phenomenon has been named the “Immigrant Paradox,” and research has begun to understand how and why acculturating to the United States puts youth at risk (García Coll & Marks, 2011).

Acculturation and enculturation do not happen in isolation or as individual processes, but in family systems; indeed, the level of enculturation and acculturation of family members, especially parents, impacts children’s adjustment (S. Y. Kim, Chen, Li, Huang, & Moon, 2009; Szapocznik & Kurtines, 1993). Because the rate and goals of acculturation vary across family members, discrepancies between parents’ and young peoples’ acculturation levels and family conflict as they relate to adjustment have been ripe areas for study. Between parents and children, it is well established that children acculturate faster and are more accepting of the host culture than are their parents (Phinney, Ong, & Madden, 2000). Whereas immigrant parents may embrace the educational opportunities available to their children in their new culture, they are dismayed by many of the other values and behaviors of American youth (Hill & Torres, 2010). Highly discrepant acculturative orientations between parents and youth are associated with higher depressive symptoms and anxiety levels, along with lower self-esteem, achievement, and achievement motivation among youth (Costigan & Koryzma, 2011; S. Y. Kim et al., 2009; S. Y. Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013).

Some suggest that teens who wish to adopt more American values feel rejected by their parents and stilted in the quest for identity development (Farver, et al., 2002). For their part, parents fear that they are losing their children to a culture that they do not fully understand or embrace and which they may find antagonistic with their own cultural views (Chao & Otsuki-Clutter, 2011; Farver et al., 2002; Hill & Torres, 2010). In a more complex form, parents may find that they endorse some aspects of American

culture (e.g., opportunity structures), but not others (e.g., press for autonomy/independence); they may not fully understand how to provide support for some aspects of the new culture, but not others. This is made more difficult because taking advantage of the opportunity structures in many ways requires a strong sense of autonomy. In support of these premises, family conflict and parenting practices have been found to mediate the relation between acculturation discrepancies and youth outcomes. When parents and youth were similar in their acculturation levels, there are lower levels of family conflict and teens have higher achievement levels, as well as better mental and behavioral health (Farver et al., 2002).

Parents’ acculturation levels and styles, independent of children’s, are also important in determining a family’s cultural outcomes. Comparing families representing four types of acculturation styles, families who were marginalized or separated in their acculturation style had more frequent conflict than families whose parents were integrated or assimilated (Farver et al., 2007). It is possible that integrated and assimilated acculturation styles reflect a resolution on the part of the parents that produces consistency, confidence, and efficacy in their parenting practices (Costigan & Koryzma, 2011). Mothers who maintained a stronger orientation to their culture of origin had daughters who had higher achievement levels (Dumka, Gonzales, Bonds, & Millsap, 2009). In the same study, fathers’ orientation to American culture was associated with higher conduct problems for sons. These authors concluded that school success was a way to honor their parents and propagate a strong cultural value, whereas an American orientation resulted in greater conflict.

### ***Acculturation, Family Processes, and Youth Adjustment***

Much of the research on family dynamics, acculturation, and children’s development has focused on family conflict, perhaps representing the conflicting cultural values and differing rates of acculturation between parents and youth. Other research has focused more centrally on the types of parenting practices that promote healthy adaptation and internalization of host cultures and cultures of origin (S. Y. Kim et al., 2009; S. Y. Kim et al., 2013). Unsupportive parenting has been shown to mediate the association between discrepancies between teens’ and parents’ acculturation levels and teens’ depressive symptoms (S. Y. Kim et al., 2009). Further, the conflict associated with discrepant acculturation levels undermines the warmth and quality of the parent-child relationship and increases alienation between parents and children (S. Y. Kim et al.,

2013). Such warmth was associated with lower levels of parental monitoring of youth (S. Y. Kim et al, 2009). Discrepancies between parents and teens are especially problematic when parents are lower on the host cultural identity as this often results in a power imbalance between parents and teens, especially for families from cultures that are more hierarchical and endorse greater respect for authority. This also impacts parents' ability to become meaningfully involved in their children's education and engage other services for their youth (Leidy, Guerra, & Toro, 2010). These issues are exacerbated among families from lower SES backgrounds (Portes & Rumbaut, 1996) and among families with adolescents, rather than children (Fuligni, 1998).

Because culture, most broadly conceived, is understood to reflect the nature of the context in which one lives, a fuller understanding of acculturation and parenting must include the ways parenting and children's development are impacted by the host cultural values and expectations, the culture of origin, and the more immediate context in which the family lives (e.g., neighborhood, economic, ethnic diversity). It is well established that effective parenting varies across SES (Hoff, Laursen, & Tardif, 2002; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000), neighborhood context (Hill & Herman-Stahl, 2002; Leventhal & Brooks-Gunn, 2000), and even by perceptions of threat and opportunity (Gurland & Grolnick, 2005; Johnson, Jaeger, Randolph, Cauce, & Ward, 2003). Indeed, parents tend to be stricter, more controlling, and less interested in autonomy when they reside in neighborhoods that are less safe or lower in economic standing, and when they perceive that the chances of their child reaching their potential is at risk. Further, these parenting practices in these contexts are associated with better developmental outcomes. Interestingly, each of these demographic or contextual factors is experienced at higher levels by ethnic minorities and immigrant families and youth (Hill, 2011; Hill & Torres, 2010). Thus, immigrant and ethnic minority parents must adapt their parenting to effectively achieve their goals for acculturation, enculturation, and safe navigation of the contexts in which they live. In order to understand acculturation and enculturation as they impact parenting and children's development, it is essential to disentangle the influences of immigrant status, ethnic minority status, and economic status from culturally based influences (Chao & Otsuki-Clutter, 2011; Hill, 2006).

Somewhat surprisingly, immigrant parents often are parenting in ways that are dissimilar to both their cultures of origin and their host cultures. For example, Mexican

immigrant and Mexican American parents were found to be *more* authoritarian than their counterparts in Mexico (Varela et al., 2004). Perhaps because of their unfamiliarity with the American cultural context, Mexican immigrant parents increased their monitoring and control, were more consciously involved with their children, and permitted fewer unsupervised activities than did parents in Mexico (Reese, 2002). This greater level of behavioral control is a discontinuation from the parenting practices of their culture of origin, and is a response to characteristics of their community context and the tensions between the two sets of cultural values and beliefs. The heightened behavioral control and divergent parenting practices are more pronounced when families feel disempowered in their new cultural context.

Whereas these stricter parenting practices are often found to be associated with positive developmental outcomes for immigrant and ethnic minority youth (Chao, 1995; Hill, Bush, & Roosa, 2003; Ispa et al., 2004), they are not shown to be effective for youth in the dominant western culture (e.g., United States) (Steinberg, Dornbusch, & Brown, 1991; Steinberg, Lamborn, Dornbusch, & Darling, 1992). Four types of explanations have been posited for these differences in impact based on contextual and cultural variations. First, as already outlined, different contexts require different levels of vigilance and control to assure the safety and healthy development of youth. High risk contexts require greater control and monitoring and the potential costs of making a mistake are high (Hill, 2009). Second, these parenting practices mean different things within their cultural context. For example, parent-child relationship quality may be conveyed through warmth and acceptance by some cultures (e.g., U.S. mainstream culture), whereas it conveyed by "being there" and being of instrument support by other cultures (Chao & Otsuki-Clutter, 2011). Similarly, excessive psychological control is associated with greater manifestations of mental health problems among individualistic, independent cultures, but this is not the case among collectivist or interdependent cultures (Chao & Otsuki-Clutter, 2011). In fact, "no-nonsense" parenting and psychological control have been found to be positively related to perceptions of warmth and parent-child relationship quality among ethnic minorities but not European Americans (Hill, Bush, et al., 2003; Mason et al., 2004). Third, for those who are wholly assimilated into a Western, individualistic cultural context (i.e., middle-class European Americans), high levels of control and monitoring is inconsistent and not normative. Such parenting practices are viewed as out of line with

the types of outcomes the culture seeks to promote and therefore those who engage in such parenting are met with disapproval, resulting in less adaptive outcomes for youth (Ispa et al., 2004). Fourth and relatedly, such parenting is consistent with values that are often associated with collectivist or interdependent cultures, including social cohesion and group harmony. More directive parenting is effective in developing these characteristics.

Even as parents utilize strategies to support their children, these strategies are evolving and parents are gaining experience in using them effectively. These methods increasingly reflect parents' resolution of cultural conflicts between their cultures of origin and the host culture. Among Chinese immigrant parents in Canada, orientations to Chinese and Canadian culture were associated with better psychological adjustment for parents (Costigan & Koryzma, 2011). However, whereas orientation to Chinese culture was directly associated with psychological adjustment, the relation between Canadian orientation and adjustment was mediated by parental self-efficacy. Further, such self-efficacy was related to the use of reasoning, warmth, and monitoring. Parents' self-efficacy and use of more individualistic parenting strategies may be due to increased knowledge about their parenting roles in a Canadian cultural context. Similarly, among Japanese parents living in the United States, there was a positive association between developing an orientation toward American culture and parents' efficacy and perceptions of competence (Bornstein, Chapter 3, this *Handbook*, this volume; Cote & Bornstein, 2003) and attributions for parental successes (Bornstein & Cote, 2003).

Parenting practices, and even efficacy and confidence in utilizing these, are merely the representation of underlying belief systems and parental cognitions. Because cultural values and the processes of acculturation and enculturation are squarely in the domain of cognitions and are abstract, and because we know that cultural worldviews about parenting are implicit (Goodnow, 2002; Hill, 2006, 2009), identifying the processes and trajectories of acculturation requires an examination of implicit belief systems within each culture and the synergies that emerge when parents navigate and resolve them. That is, the field needs a richer understanding of the acculturation of parenting ideologies and cognitions (Bornstein & Cote, 2003; Cote & Bornstein, 2003). Changes in the underlying reasoning and foundation of practices may indeed change their effectiveness (Hill, 2006). Further, efforts to increase our understanding of parenting cognitions increases the likelihood that the meaning of parenting will be understood within the cultural

frame in which they are embedded. Japanese American and European American mothers of infants varied in their knowledge levels of child development and as the Japanese mothers became more acculturated, their knowledge of child development increased (Bornstein & Cote, 2003; Cote & Bornstein, 2003). However, rather than concluding that the acculturated mothers were better parents, Cote and Bornstein were careful to link the variations in knowledge to their cultural frames. They concluded that because mothers in an individualist cultural context are primarily responsible for the health and well-being of their children, are expected to notice milestones and issues in their children's development, and expected to identify and arrange for child care support and specialists as needed, European American mothers are *required* to know more about individual child development than are mothers in collectivist culture, where childrearing is more of a group endeavor. Consistent with this, European American parents were more likely to attribute parenting successes to their own ability (Bornstein & Cote, 2003), making parental self-efficacy and self-confidence increasingly salient for European American parents. However, in following these mothers and their infants for 15 months, while it appeared that Japanese American mothers' acculturation level at Time 1 was positively related to attributions of parental successes to one's ability and knowledge about parenting and child development, these results were driven by changes in socioeconomic status. In contrast, these mothers' orientation to Japanese culture was associated with greater satisfaction with parenting. The authors concluded that the fact that parenting beliefs are resistant to change suggests that acculturation is not inevitable when families immigrate but it is an active process and decision. Some of the external markers of acculturation may be adapted, such as celebrating the holidays of the host country, but deeper values and practices are maintained (Farver et al., 2007). When cross-cultural tensions and conflicts cannot be resolved, immigrant parents may exercise parenting practices that they do not feel are ideal or wholly in line with their ideology, but seem to be effective within their new cultural context.

In addition to adopting ideologies and practices of the host culture and maintaining a form of the practices of one's culture of origin, new, qualitatively different beliefs and practices can emerge in the context of acculturation (de Haan, 2011). These beliefs and practices are often in response to challenges to known ways of parenting (Farver et al., 2007), but allow parents to function across cultural contexts. The increased monitoring that is often exhibited



by immigrant parents may be a means of maintaining closeness, providing guidance, and providing a “bridging” function across the two cultures (de Haan, 2011) rather than being due to the challenges of residing in an unsafe neighborhood. This bridging function is not characteristic of either cultural orientation. Exhibiting a stronger endorsement of the beliefs and cultural practices than one might exhibit in their natal country is another adaptation. In one study, Asian Indian immigrants were found to be “more Indian” in the United States than in India (Dasgupta, 1998), likely a protective mechanism to assure that the culture is not lost.

Whereas most immigrants arrive with hopes and dreams of a better future for themselves and their children and have a desire to embrace the advantages and opportunities of a new culture and land (e.g., U.S. culture for immigrants and ethnic minorities), there are significant advantages in maintaining a strong orientation to one’s culture of origin, especially when one cannot fully assimilate because of phenotypic characteristics. Strong ethnic identity has been associated with higher achievement levels (Hughes et al., 2006; Spencer, Cross, Harpalani, & Goss, 2003; Spencer & Harpalani, 2008) and shown to weaken or buffer the negative impact of experiencing discrimination (Brody et al., 2006). Among second-generation immigrants, an orientation to one’s culture of origin was related to greater life satisfaction, whereas an orientation to U.S. culture was not related to well-being (Abad & Sheldon, 2008). The decrease in adjustment between first- and second-generation immigrants has been attributed to weakened ties to the culture of origin, as well as a lack of psychosocial character strengths and practical access to social support networks within the ethnic community (Schwartz & Montgomery, 2002). This may be due, in part, to the increase of social cohesion that is associated with stronger ethnic orientations (Fuller & García Coll, 2010). Endorsement of ethnic cultural values may be a resilience factor for immigrants because it sustains cultural norms of behavior that may be more in line with parents’ expectations (due to their often lower acculturation levels) (Gonzales et al., 2006).

### Summary

Because immigrant and ethnic minority families are raising children within cultural contexts that differ from their ethnic culture, they are the primary sources of ethnic enculturation. Indeed, their parenting beliefs and practices are associated with children’s and adolescents’ ethnic identity

and level of ethnic enculturation. For example, parental autonomy support is positively related to ethnic immersion (Abad & Sheldon, 2008). However, parents’ efforts in increasing ethnic pride is more effective when parents are highly involved, when the families reside in neighborhoods characterized as low risk, and when they exercise low levels of harsh parenting (Chao & Otsuki-Clutter, 2011). Even as immigrant parents are attempting to raise their children to reach the goals and dreams they have for them, acculturation affects the dreams and outcomes themselves. As parents prepare their children to succeed academically, emotionally, and economically, many come to realize that they must compromise and diminish their own desires for some characteristics, such as respecting authority figures, and accept characteristics that are indicative of American cultural norms, including individualism, self-expression, and assertiveness (Dumka et al., 2009), in hopes of attaining their real goal of a better life for their children. Parental influence and goals, as well as outcomes in children, are further complicated when each parent comes from different cultural or ethnic backgrounds. In the next section, we focus on multiracial children whose diverse context includes parents from different ethnic backgrounds.

### PARENTING MULTIRACIAL-ETHNIC CHILDREN

The number of interracial marriages has dramatically increased over the past five decades (Bracey, Bámaca, & Umaña-Taylor, 2004). The Supreme Court’s repeal of laws barring interracial marriages in *Loving v. Virginia* was a catalyst for changing the racial demographics of America (Brunsma, 2005; Fusco, Rauktis, McCrae, Cunningham, & Bradley-King, 2010). This legal victory, coupled with progressive social acceptance, led to a “biracial baby boom” (Root, 1992). The number of biracial children rose from 1 in 100 children during the 1970s to 1 in 19 in 1999 (Herman, 2004). When the 2000 census was revised to allow respondents to check off more than one racial category, 2% of the population described themselves as multiracial (Bracey et al., 2004; Brunsma, 2005; Gullickson & Morning, 2011). By 2050, it is expected that 20% of Americans will identify as multiracial (Lee & Bean, 2004). However, some estimates suggest that 20% is a conservative number and that anywhere from 30% to 70% of African Americans are multiracial and almost all Latino/as, Filipino/as, American Indians, and Native Hawaiians have mixed ancestry (Root, 1992). Growing—and perhaps already dominating—in numbers

and visibility, mixed-race individuals are slowly changing the racial “face” of this country (Root, 1992).

Although the term *multiracial* is used in many different ways, we define it as characterizing an individual who identifies “with two or more racial heritages that are based on socially constructed criteria” (Lou, Lalonde, & Wilson, 2011, p. 80). In a society that has historically acknowledged only monoracial classifications, multiracial children and adolescents develop and understand their own identities often in conflict with prevailing notions of ethnic and racial identity. In the following sections, we examine the history of racial assignment in America and how it impacts multi- and monoracial children’s racial identity and identification.

Throughout the history of the United States, racial assignment of mixed-race people has primarily taken place in two ways. First and more widely known, the practice of hypodescent assignment—colloquially referred to as the “one-drop rule”—assigns biracial individuals to the lower-status racial group of their two parents (Gullickson & Morning, 2011; Nakashima, 1992). From the slavery era to the time of Jim Crow laws in the Southern states, the one-drop rule was used to determine who was African American and who not (Gullickson & Morning, 2011) was. It was also used during World War II when individuals who were as little as one-sixteenth Japanese were put into U.S. internment camps (Nakashima, 1992). While it is still hotly debated, there is some evidence that the one-drop rule still affects modern society (Gullickson & Morning, 2011). The United States resident Barack Obama is often cited as evidence. While he is biracial (i.e., African American father and European American mother), he is frequently referred to as the first African American president (Gullickson & Morning, 2011). The second, lesser-known practice of hyperdescent assignment is historically rooted in classifying individuals of European and American Indian ancestry as only White. Underlying this practice was the belief that the American Indian heritage could be fully assimilated into the wider European American group (Gullickson & Morning, 2011).

These two policies reveal American tendencies to perpetuate racial oppression by viewing complex relationships in an overly simplistic Black–White dichotomy (Root, 1992). In fact, most of the research on multiracial individuals looks only at those with mixed minority and European American ancestries, not considering two or more mixed minority ancestries. This partly reflects the reality that monoracial assignment of biracial children who are part White has a much to do with the assignment

of power and social capital as it does about the blending of cultural backgrounds into a coherent multiethnic identity. As a consequence of the rigid Black–White lines, mixed-race individuals can experience rejection by both minority and White groups (Root, 1992). Minorities who have been oppressed in turn apply rigid rules to determine who can claim legitimate membership within their racial community (Root, 1992). More research needs to be done on multiracial individuals with two minority ancestries and the effect it has on their group membership (Lou et al., 2011). In sum, the past policies of hypodescent and hyperdescent classifications still have ripple effects on the racial assignment of multiracial individuals today.

### Racial Identity

Most of the extant research on racial identity focuses on samples of multiracial adults (Brunsma, 2005). Only in the past decade has there emerged a field of study involving multiracial adolescents (Brunsma, 2005). However, there are few studies on younger multiracial children (Brunsma, 2005). The paucity of studies focusing on the earlier years is largely because the issue of having multiple identities often becomes salient only in adolescence. Based on the existing literature, we first focus on models of multiracial identity and then examine the development of racial identity in multiracial children and adolescents.

Models on multiracial identity have evolved over the past five decades. From the 1960s to the 1980s, they moved from developing a positive non-White racial identity to combining all the individual’s ethnic memberships into one. Finally, in the 1990s, models began to recognize that multiracial individuals can have fluid identities that change salience based on context (Brunsma, 2005; Doyle & Kao, 2007; Root, 1992). The introduction of fluid identities has changed the research discourse, and evidence has emerged indicating that racial identity is influenced by four major factors. First, social class is a crucial variable in racial identity. Multiracial individuals of a higher social class are less likely to identify with their lower-status minority identity (Brunsma, 2005). Second, the racial composition of social networks matters in identity development (Brunsma, 2005). Multiracial individuals living within a largely minority context are more likely to identify with their minority status. In contrast, multiracial individuals with “Whiter” social networks have more flexibility to identify as multiracial or White (Brunsma, 2005). Third, family structure also affects this process. Although there is some debate on this, there is evidence to suggest that

young multiracial women more often identify with their mother's racial identity than with their father's (Brunsma, 2005). Finally, phenotype and appearance matter. Identity is shaped by how family and friends perceive a multiracial individual's skin tone (Brusma, 2005).

In developing fluid identities across childhood and adolescence and understanding the role of context, a three-stage model has been proposed (Jacobs, 1992). In Stage I, biracial children experiment with different racial identities because they do not yet understand the constancy of skin color (i.e., her or his color will not change) and its associated categories (Jacobs, 1992). Stage II occurs when the biracial child internalizes the constancy of skin color—that is, the fact that this color will not change. Last, Stage III describes the increase in the child's understanding that her or his racial group memberships are determined by parentage and not skin color (Jacobs, 1992). As multiracial children progress through these stages, they gradually grow to understand the advantages, disadvantages, status, and opportunities of each racial group (Herman, 2004).

Similar to other adolescents their age, multiracial adolescents become increasingly aware of their self-identities and their desire for peer acceptance (Herman, 2004). Social interactions are major contributors to identity development (Herman, 2004). Unlike their monoracial peers, multiracial adolescents' racial identity development is more complex. When a multiracial adolescent identifies with a particular ethnic group, his or her affiliation is based on the four aforementioned factors: class, social networks, family structure, and skin tone. As racial identity develops, it has a profound impact on self-identity. Race then becomes a key filter to view and understand oneself and one's experiences (Herman, 2004).

## Summary

Multiracial individuals can sometimes choose to be part of only one racial group or multiple groups, depending on the group's acceptance and context (Brittian, Umaña-Taylor, & Derlan, 2012; Herman, 2004). This choice is often determined by self-acknowledgment of the multiracial youth regarding their biology and membership prospects within and among socially constructed racial groupings (Herman, 2004). For instance, many Native American tribes require mixed-race individuals to demonstrate blood quantum in order to be officially admitted and receive special privileges and access to tribal lands (Doyle & Kao, 2007). Further, the identity of mixed-race individuals with African American ancestry is less fluid once it has been

vetted and agreed upon; those individuals are more likely to be subjected to hypodescent assignment and are more often identified only as Black. In fact, both mixed-race Native Americans and mixed-race African Americans have less choice over their racial identifications than members of other racial/ethnic groups (Herman, 2004). For example, parents of mixed Asian and European American children have more options in determining how they racially identify their children (Xie & Goyette, 1997). While Asian-European American parents may have more options, their choice is still dependent on contextual factors like the Asian parent's gender, degree of assimilation, and awareness of her or his ethnic heritage (Qian, 2004; Xie & Goyette, 1997). Although a child's racial identity is largely affiliated with the parents' race, society's imposed categorization of racial membership can affect how a multiracial individual classifies herself or himself. This was especially apparent during the completion of the 2000 Census, the first census to allow Americans to identify with more than one race. Research has yet to be done that identifies and examines the motivations that undergird individual's use of single and multiracial categorizations. This is especially important because the vast majority of Americans are of mixed ancestry in generations past. As multiracial identities become more common and accepted and the political and power differentials across racial categories shift, changes in the fluidity and salience of multiple identities will be important to track and understand. The process of identity, development and adjustment can be even more complicated when children raised outside of their country of origin, commonly referred to as "third culture kids." An overview of relevant studies that have explored these subgroups of children and families is presented in the following section.

## THIRD CULTURE KIDS

The number of children raised outside their country of birth is steadily increasing in our globalized world. In 2012, there were an estimated 6.32 million Americans (not including those affiliated with the U.S. government) living abroad (Association of Americans Resident Overseas, 2012). Similarly, there were approximately 5.5 million British citizens living overseas, almost 1 in 10 of the U.K. population at that time (Institute for Public Policy Research, 2006). Many of these people are parents raising children in foreign settings. The experiences of these children—often referred to as "Third Culture Kids

(TCK)”—growing up abroad will be the focus of this section. Although the prevalence of this is increasing and there is increasing awareness of their unique challenges, there empirical research on their development and trajectories is sparse (Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume). Based on this limited but important body of research, we examine the TCK experience in three ways. First, we begin by defining what it means to be a TCK. Second, we examine the impact of being raised abroad on TCKs’ cultural identities. Last, we analyze the psychological impact of repatriation to the parent’s home country on TCKs.

Useem first coined the term “Third Culture Kids” (TCK) to describe the shared experiences of American children living abroad (Useem & Downie, 1976). This term was defined by Pollock and Van Reken’s (2001) book, *Third Culture Kids*. Their widely cited and accepted definition of a TCK describes a person who has spent a significant part of her or his developmental years outside the parents’ culture. The TCK frequently builds relationships in all of the cultures while not having full ownership of any. Although elements from each culture are assimilated into the TCK’s life experience, the sense of belonging is found in relationships with others of similar background (Pollock & Van Reken, 2001, p. 19).

Instead of taking full ownership of one culture, TCKs incorporate parts of three surrounding cultures: (1) their parents’ culture of origin, (2) the host culture of the nation in which they now live, and (3) the culture shared by an ever-changing community of expatriates who have access to international schools (Peterson & Plamondon, 2009). TCKs most often come from one of four contexts based on their parents’ occupations (Bonebright, 2010; Davis et al., 2010; Hervey, 2009): (1) children of the military, (2) children of diplomats, (3) children of business expatriates, and (4) children of missionaries. The experiences of growing up as “military brats” and, to a lesser extent, missionary kids are relatively well studied. However, there is a paucity of research on the experiences of their more privileged peers whose parents are in diplomacy and business. These children often go to the best international schools, live in exclusive and expensive expatriate areas, and are relatively affluent compared to their other TCK peers. Research examining all four TCK subgroups together is extremely sparse (Peterson & Plamondon, 2009).

In addition to the four groups, another way to slice the TCK experience that is rarely discussed in the research and popular literature is by nationality. Most of the books and journal articles discuss the TCK experience from

a predominantly American-centric perspective. In other words, we know a lot more about American TCKs than we do about their non-American counterparts who frequently attend the same international schools and matriculate to the same U.S. colleges. These non-American TCKs often look and sound like Americans although they are raised abroad. We know very little about their experiences: Do they display a greater cultural distance in their relationships with their parents, who may have limited experiences with American society and culture? Raised and educated with an American worldview in their international schools, do these students face challenges in assimilating back into their parents’ home country? How does their diverse upbringing affect their national and/or cultural affiliations? These are questions for future research studies.

As the range of these subgroups suggest, the TCK population encompasses a very diverse group of children. Still, while these children have diverse backgrounds, their common experience of being raised in a foreign setting brings them together. Many TCKs take on this label because it gives them a sense of belonging to a peer group and a way to find meaning in their multicultural identities.

### Cultural Identity

Researchers have found that the greatest challenge for TCKs is forming their cultural identities, due to their mobile childhoods (Fail, Thompson, & Walker, 2004; Pollock & Van Reken, 2001; Walters & Auton-Cuff, 2009). Cultural identity is formed when an individual takes on worldview beliefs and engages in actions that unite people within a cultural community (Jensen, 2003; Shweder et al., 1998). Among other ideals, a worldview provides guidance and answers to the essential questions of existence, purpose, and meaning in relation to others in society (Jensen, 2003). The process of achieving a stable cultural identity requires an adolescent to make choices about membership in a cultural community. These decisions become complex for TCKs who have lived in multiple cultures throughout their childhoods. They often feel culturally rootless and do not feel wholly connected to any one culture (Walters & Auton-Cuff, 2009). When asked, many TCKs state either that they belong to many cultures or that they belong to no culture at all (Fail et al., 2004). Like others who struggle with their identity, they are often drawn to others with similar backgrounds. Their cultural identity eventually becomes rooted in a community of fellow TCKs who share their cultural ambiguity. While researchers often



observe this TCK huddle (i.e., Pollock & Van Reken 2001; Walters & Auton-Cuff, 2009), we still know little empirically about its prevalence among TCKs and its impact on their well-being in adolescence and beyond. This leaves many questions open for the future. Do all TCKs struggle with cultural identity formation? What are some risk and resilience factors that buffer their transition to adolescence and adulthood? Do they all follow a common path of identity development? What roles do parents and peers play in their cultural identity formation and their transition back to their home culture?

### Repatriation

One of the major triggers of cultural identity crisis is when a child or an adolescent permanently returns to his or her passport country after spending time abroad. Repatriation is inevitable for an American TCK. The child leaves when the parent's work assignment is completed or after turning 18. For non-American TCKs, the repatriation may take place after they finish college in the United States or the United Kingdom. However, their repatriation is less inevitable because, if they are able to get a visa to stay, many choose not to return to their passport country. The repatriation of TCKs, however, is significant because it distinguishes the TCK experience from that of refugee or immigrant children as major international moves occur without the intent to immigrate. Next, we examine the psychological impact of repatriation and the effects of varying reentry ages on TCKs.

According to Sussman (2000), repatriation is often more stressful than the initial move abroad. It is suggested that this may be attributable to the different cognitive processes involved in a permanent move as opposed to a temporary cultural adaption of a new country (Sussman, 2000). However, we know very little about the effect of repatriation on TCKs. The few studies that are available examine the process of repatriation on adults sent abroad by their employers. Upon return to the home country, a repatriated adult may find his or her worldview changed by the experience abroad. This new worldview no longer matches the prevailing cultural norms of the home country and it may lead to high levels of psychological distress (Sussman, 2000). In contrast, some TCKs may never feel the effect of this worldview gap because they left their home countries before becoming old enough to recognize these cultural norms. Their distress comes not from the mismatch of the old and new but from having a new permanent worldview imposed on them as they hit adulthood.

For them, it is a new worldview, but without a comparable perspective or framework to anchor their experiences.

TCKs who return to their native country before adolescence tend to have fewer problems with reacclimation (Huff, 2001). Those who return during adolescence—predominantly for higher education—are surprised when they experience “reverse culture shock” (Bonebright, 2010; Fail et al., 2004; Hervey, 2009; Huff, 2001). Many feel “different” from their peers, which can lead to social marginalization. While abroad, a TCK has friends with similar international outlooks, lives a comparatively privileged lifestyle, and may look distinct from locals. Unlike traditional immigrants, their different look, style of dressing, and mannerisms confer privilege and draw interest rather than marginalization. In his or her own country, a TCK's new friends may have never been abroad. The loss of a supportive TCK community and special foreign status can be difficult. It is challenging because adolescence is a period when peer acceptance becomes especially salient and TCKs are no exception.

TCKs who repatriate for college may feel they have to put their foreign experiences aside in order to fit in with their peers (Walters & Auton-Cuff, 2009). This often leads to feelings of grief, loss, and loneliness in a place that should be “home” (Bonebright, 2010). Such feelings can and usually do ease over time with the help of supportive parents and fellow TCKs (Huff, 2001). However, there are few studies on what this personal support should look like in practice. There are also no empirical studies evaluating the effectiveness of pre- and post-repatriation seminars run by organizations seeking to ease the transition. Eventually, if and when TCKs are able to balance the international and passport country's worldviews successfully, their multicultural backgrounds can become assets in their friendships and careers.

### Summary

To summarize, the number of TCKs will inevitably increase as our world becomes more connected. As the research literature on TCKs is an emerging field, it is an area that is open for many more studies to be done. Many of the existing theories and descriptions on the TCK community come from nonscientific and anecdotally based books, articles, and websites that do not meet the empirical and theoretical rigor of a peer-reviewed journal. New directions in this field include conducting comprehensive studies on the four TCK populations, comparing the experiences of American and non-American TCKs, investigating the

factors that affect TCK's cultural identity development, and understanding parents' roles in supporting the TCK experience. Similar to the parenting issues and challenges associated with identity development among bi- and multiracial and Third Culture Kids are the experiences of youth who are raised by parents who do not share their racial or ethnic background. Transracial adoption and parenting have become increasingly important to understand, as the number of children growing up in this family context continues to increase in the United States (Jacobson, Nielsen, & Hardeman, 2012).

## TRANSRACIAL ADOPTION AND PARENTING

Rises in humanitarian efforts to care for international war orphans as well in the infertility rates of U.S. couples, along with a decrease in the availability of European American babies for adoption, has led to a dramatic increase in transracial adoptions of international and domestic children by American parents (Jacobson et al., 2012). Using data from the National Survey of Adoptive Parents, Jacobson et al. (2012) finds that 39% of adoptees have a parent from a different racial or ethnic group. While this number is quite large, it is important to note that 85% of transracial adoptions are of American parents adopting international—predominantly from Asia, Africa, Eastern Europe, Latin America, and Africa—and not domestic children (Zhang & Lee, 2011). While prospective parents adopt from abroad, the number of domestic adoptees waiting for families has increased from 20,000 in 1990 to 130,000 in 2007 (Zhang & Lee, 2011). Minority children—particularly African Americans—are largely overrepresented in this group of infants and children deemed hard-to-place (Farr & Patterson, 2009).

Transracial adoption occurs when a parent—typically of European American descent—forms his or her family with a child who is from a different racial or ethnic group (Vonk & Angaran, 2001). Transracial adoptees include children born domestically within the United States and children born abroad. Although transracial adoption in theory encompasses any family who raises a child from a different background, it is largely used in practice to describe minority children raised by European American parents. To understand why this is a phenomenon largely focused on European American parents, it is important to situate it within its historical context within the United States. Then, we analyze the effect of transracial adoption on adoptees in a range of outcomes: racial identity

development, psychosocial adjustment, and self-esteem. We conclude by examining the existing policies and programs in place to develop cultural competencies in transracial families.

### Brief Overview of Historical Patterns of Transracial Adoption

Transracial adoption has historically been a controversial issue in the United States. Patterns of transracial adoptions began to emerge after a series of wars—World War II, the Korean War, and the Vietnam War—which left behind many international orphans needing families (Jacobson et al., 2012). Beginning in the 1960s, however, two factors led to higher rates of domestic transracial adoption. First, the number of European American infants available for adoption decreased due to the acceptance of abortion, birth control, and single parenthood (Perry, 2011). Second, the civil rights movement led to greater tolerance for race mixing within marriages and families (Perry, 2011). Together, these two factors led to a rise in the number of European American parents adopting African American children: a total of 12,000 placements were made between 1960 and 1976 (Brodzinsky & Pinderhughes, 2002; Jacobson et al., 2012; Perry, 2011).

As the trend grew, this pairing of European American parents with ethnic minority children became a contentious issue. African American and Native American communities were concerned that these transracially adopted children would grow up with negative racial attitudes and identities, leading them to greater risk for psychological problems (Brodzinsky & Pinderhughes, 2002). Their voices culminated in 1972 when the National Association of Black Social Workers (NABSW) denounced the transracial adoption of African American children as a form of “cultural genocide” (Perry, 2011). They argued that European American parents were unable to equip African American children with a positive Black identity to cope with racism in our society (Jacobson et al., 2012; Perry, 2011). As a result, many child welfare organizations—including the Child Welfare League of America—sought to minimize the number of transracial adoptions, and the numbers fell from about 2,500 in 1971 to 830 in 1975 (Fenster, 2002; Perry, 2011).

In the 1980s, the NABSW's position was challenged by research revealing that African American transracial adoptees did not suffer from permanent psychological harm (Feigelman & Silverman, 1984; Perry, 2011). Additionally, the increasing number of minority children in the

welfare system and the relative lack of available minority foster or adoptive parents led agencies to allow more transracial matching (Farr & Patterson, 2009). Soon after, the Multiethnic Placement Act of 1994 became law. It prohibited federally funded agencies from delaying foster and adoption placements on the basis of race (Farr & Patterson, 2009; Perry, 2011). While transracial adoptions remain controversial, they are now more widely accepted by the public (Farr & Patterson, 2009).

### **Developmental Outcomes and Adjustment of Transracial Adoptees**

The most significant issue surrounding transracial adoption centers on how differing ethnic contexts affect adoptees' developmental outcomes. To evaluate short- and long-term effects of adoptions by parents of a different ethnicity, studies commonly look at the adoptees' racial identity development, psychosocial adjustment, and self-esteem. These three outcomes are extensively researched due to concerns over nonminority parents' ability to raise minority children and prepare them for experiences in a racialized society.

#### ***Racial Identity***

There is a strong consensus that African American parents play a significant role in nurturing their children's positive ethnic identities (Butler-Sweet, 2011). A positive ethnic identity is important because it helps to protect African American children from racism (Butler-Sweet, 2011). It is argued that European American parents cannot provide this type of socialization because they have not experienced what it is like to be a member of a minority group. To address these fears, research since the 1980s has focused on the racial identity and mental health outcomes of these adoptees.

The results from numerous studies on transracial adoptees have produced mixed results. There is some evidence that suggests lower racial identity outcomes for transracial adoptees. Butler-Sweet's (2011) review on racial identity finds evidence that compared to in-race adoptees, transracial adoptees have lower scores on racial identity measures (Padilla, Vargas, & Chavez, 2010). Similarly, a case review on Korean transracial adoptees shows that most of them preferred to identify as "American" as opposed to an ethnic-specific description (W. Kim, 1995). Investigating even further, Bergquist, Campbell, and Unrau (2003) follow adoptive families over 7 years, finding that Korean children of European Americans identify more as European American over time. It exemplifies the

transracial adoption paradox: Although they are visible racial minorities, they are perceived by their families and even by themselves as members of their parents' European American culture (Shiao & Tuan, 2008). However, among people unfamiliar with their familial and adoptive backgrounds, they are perceived and treated as racial minorities. Their lack of a minority racial identity may make them unprepared to face and resist racist encounters.

On the other side, four major longitudinal studies find no significant differences in racial identity development after following transracial and same-racial adoptees for at least 12 years (Bagley, 1993; Brooks & Barth, 1999; Feigelman, 2000; Vroegh, 1997). The samples are diverse, comprised of children, adolescents, and adults from a variety of backgrounds: Afro-Caribbean, African American, Asian American, European American, Latin American, and mixed-race (Bagley, 1993; Brooks & Barth, 1999; Feigelman, 2000; Vroegh, 1997). All four studies agree that when compared with same-racial adoptees (children that are adopted by parent of their race), transracial adoptees have similar outcomes on racial identity and cultural identity measures (Bagley, 1993; Feigelman, 2000). Furthermore, they predominantly continue to identify as minorities from childhood to early adulthood (Vroegh, 1997). Brooks and Barth (1999) assess adoptees on their feelings (i.e., discomfort, pride, and embarrassment) concerning their ethnoracial appearance or birth group. They report no significant differences in the responses of transracially and same-racially adopted adults. Adoptees in their sample are mostly classified as having "secure" (65%) or "strong" (35%) racial identities (Brooks & Barth, 1999).

Given evidence suggesting both problematic and neutral impacts together, we find that the body of research on racial identity development in transracial adoptees is inconclusive. To determine how to support the healthy identity development of transracially adopted youth, two contextual factors have been identified. First, there is evidence suggesting that European American parents who decide to live in more diverse communities tend to have transracial children who experience less discomfort about the incongruence of their appearance and that of their immediate family members (Feigelman, 2000). More research should be conducted on the impact of a family's residential context choice on adoptees' racial identity outcomes. Second, researchers have observed that a majority of African American adoptees are biracial (Vroegh, 1997). These adoptees tend to have lighter complexions (Vroegh, 1997). As a result, they may find it harder to find acceptance in both Black and White communities (Russell,

Wilson, & Hall, 1992; Vroegh, 1997). Additional work needs to parse out these ethnic distinctions for connections to biracial identity formation.

### ***Psychosocial Adjustment***

In addition to considering parent-child relationships in transracial adoptions, psychosocial adjustment of transracial adoptees later in life is of significant interest. If European American parents are unable to instill a strong minority identity, do these children fare worse than their same-racially adopted peers or nonadopted siblings? Numerous studies converge on the consensus that transracial adoption is not detrimental to the psychosocial and developmental needs of adoptees from the time of adoption to adulthood (Bagley, 1993; Weinberg, Waldman, van Dulmen, & Scarr, 2004). Transracial and same-racial adoptees have similar reported levels of adjustment outcomes (Brooks & Barth, 1999; Feigelman, 2000).

Several researchers report that differences in developmental outcomes (i.e., behavioral problems and learning difficulties) only emerge when adoptees are compared to their nonadopted siblings (Sharma, McGue, & Benson, 1998; Weinberg et al., 2004; Whitten & Weaver, 2010). Some categories of adoptees are at greater risk. Male adoptees exhibit more maladjustment than female adoptees (Brooks & Barth, 1999), and domestic adoptees more than international adoptees (W. Kim, 1995; Whitten & Weaver, 2010). Although these differences in adjustment exist, they are small and should not be overinterpreted (Weinberg et al., 2004; Whitten & Weaver, 2010). Vroegh (1997) points to individual factors as an explanation for adolescent psychosocial adjustment outcomes. One such factor is the age at which a child is placed in a family; those placed in families at younger ages generally show better long-term adjustment outcomes (Weinberg et al., 2004). These findings suggest that while transracial adoptees do not seem to differ from same-racial adoptees on psychosocial adjustment outcomes, there are small within-group differences that must be considered. Many of the studies on adoptees' psychosocial adjustment are based on parents' reports. There is a possibility that parents can overestimate or underestimate their adoptees' behavioral problems to researchers (Weinberg et al., 2004). Future research should attempt to collect reports and assessments directly from adoptees.

### ***Self-Esteem***

Transracial adoptees may feel negatively about their birth parents' relinquishment and about physical dissimilarities

with their adoptive parents (Juffer & van IJzendoorn, 2007). While these negative feelings might lead to a range of mental health issues, self-esteem is often the most salient indicator. Two decades of evidence reveals that transracial and same-racial adoptees do not differ significantly in self-esteem (Alexander & Curtis, 1996; Bagley, 1993; Juffer & van IJzendoorn, 2007; Vroegh, 1997). While adoptees overall do exhibit higher self-esteem than their institutionalized peers, a meta-analysis by Juffer and van IJzendoorn (2007) casts doubt on several other presumed causes of low self-esteem. Contrary to popular belief, a child adopted before his or her first birthday is just as likely to have low self-esteem as one adopted later (Juffer & van IJzendoorn, 2007). Similar levels of self-esteem are recorded between adolescent and nonadolescent adoptees, and between international and domestic adoptees (Juffer & van IJzendoorn, 2007). In sum, there is some empirical support that suggests that adoptees—regardless of age of placement, country of birth, and race—are able to develop normative levels of self-esteem (Juffer & van IJzendoorn, 2007). Future work can focus on identifying protective factors, such as racial-ethnic socialization, in the adoptive family context that encourage resilient self-esteem outcomes in adoptees (Juffer & van IJzendoorn, 2007).

### **Transracial Parental Socialization and Cultural Competencies**

Complementing the debate on racial identity development, there is now an emerging field of research that focuses on developing adoptive parents' cultural competencies to help them raise minority children. There are federal laws governing adoption that apply differently based on the child's origin (Evan B. Donaldson Adoption Institute, 2008). The three adoption categories are foreign-born children, Native American children, and foster care children (Evan B. Donaldson Adoption Institute, 2008).

Due to international and federal laws, parents interested in adopting internationally are required to receive appropriate training and counseling related to the adopted child's ethnic and national background (Evan B. Donaldson Adoption Institute, 2008). Similarly, Native American children receive special protection from the Indian Child Welfare Act of 1979 that ensures that their cultural background is preserved. This law was instituted as a response to the removal of Indian children from reservations to institutions or non-Indian homes (Evan B. Donaldson Adoption Institute, 2008). It actively seeks to keep Native American



children with families of the same ethnic heritage (Evan B. Donaldson Adoption Institute, 2008). All other U.S. children in the foster care system are subject to the Multiethnic Placement Act of 1994, which prohibits delaying or denying an adoptive placement on the basis of race (Evan B. Donaldson Adoption Institute, 2008). Parents who adopt these children are not required to be familiar with the child's racial, cultural, or ethnic needs.

As a result of this legislative disparity, children in the U.S. foster system are the least protected among the three groups. This means that among all adopted children African American and Latino/a American children are the only ones for whom laws have not been enacted to ensure that adoptive parents are prepared to support these children's ethnic, cultural and racial identity development. By some estimates, half of private and public adoption agencies have tried to resolve this inconsistent regard for these children's race or ethnicity by providing cultural competence training for parents (Evan B. Donaldson Adoption Institute, 2008; Vonk & Angaran, 2003). This suggests that in the best of circumstances, only half of all parents who adopt transracially are prepared for the challenges related to race and culture (Vonc & Angaran, 2003). Even more discouragingly, many of these trainings are offered to all prospective adoptive parents and are not exclusively tailored to the needs of transracial adoption (Vonc & Angaran, 2003).

Cultural competency training usually occurs preadoption and covers three key areas of transracial adoption—(1) racial awareness: developing the parent's sensitivity to racism and discrimination and examining personal stereotypes and prejudices; (2) multicultural planning: highlighting the importance of facilitating opportunities for their transracially adopted children to engage with their birth culture and community; and (3) survival skills: equipping parents to prepare their adoptive children for racism and discrimination (Bergquist et al., 2003; Vonk & Angaran, 2001; Vonk & Angaran, 2003). Taken together, these three core competencies are crucial in successfully nurturing minority children.

While the curriculum has generally been lauded, a valid criticism of the cultural competency training and support is that it stops upon adoption. According to Vonk and Angaran (2003), few public adoption agencies and less than a third of private agencies offer postplacement training. This is highly illogical since issues relating to the child's racial identity and socialization only concretely emerge after adoption and become most salient in late childhood and adolescence (Evan B. Donaldson Adoption

Institute, 2008). Parents play a pivotal role in how well their children thrive and more research needs to be done on how to better support transracial adoptions over time. There are also few studies evaluating the content and impact of the cultural competence training (Vonc & Angaran, 2003). Program evaluations would be helpful in identifying effective programs and comparing the quality of instruction between private and public adoption agencies (Vonc & Angaran, 2003).

## Summary

Our review of the literature on transracial adoption suggests that even though transracial adoptions may have positive outcomes, the unique challenges that these parents and children face are complicated (Brodzinsky & Pinderhughes, 2002). Despite these difficulties, many transracial adoptees seem to do just as well as their same-racial peers on measures of racial identity, psychosocial adjustment, and self-esteem. They seem to do especially well when their parents are sensitive and proactive about their racial and cultural needs. More research needs to be done on how best to develop, support, and sustain cultural competencies in transracial families, along with policy interventions to ensure that adoptive parents are adequately prepared to support their children. Of course, families are only one context that influences the healthy development of ethnic, racial and more general identity development. Other contexts, such as schools and peers, play equally important roles.

## SOCIAL POSITION, SOCIAL STRATIFICATION, SCHOOL CONTEXT, AND ACADEMIC OUTCOMES

Given that children spend more of their waking hours at school than anywhere else, the school environment is considered of primary importance to child development (Eccles & Roeser, 2003). Racial and ethnic categories and associated meanings attributed by systems at multiple levels influence how children define and understand themselves as they mature into adulthood. Particularly influential is how one's own racial and ethnic backgrounds fit into social contexts, such as the school setting. These issues have implications for policy as many U.S. schools in the post-*Brown v. Board of Education* context are moving back toward segregation despite heterogeneity in neighborhood contexts (Tarasawa, 2012).

### Social Interaction Patterns in School Settings

Whereas youth develop their identities based on interactions with others, it is important to understand who the “others” are with whom they are interacting. The fact that some youth develop in multicultural contexts might lead us to assume that they interact with diverse groups of individuals. On the other hand, the fact that so many have posed questions—for example, Why are all the Black kids sitting together in the cafeteria? (Tatum, 2003)—indicates this may not necessarily be the case. Researchers studying youth development in school settings have focused on peer nominations to determine with whom students form friendships, and with whom they may experience conflict. Results of these studies suggest that in heterogeneous schools, there are simply more opportunities for either type of contact with members of other racial-ethnic groups (Goldsmith, 2004b). Some evidence has demonstrated that African American students are more likely to nominate their same group peers for both positive and negative interactions, indicating that even in diverse schools; they may be especially likely to form homogeneous peer groups (Bellmore, Nishina, Witkow, Graham, & Juvonen, 2007).

In addition to peer interactions, researchers have recognized that other factors are associated with differential outcomes for children. For example, recognizing that poverty level of a school is highly conflated with minority composition (Logan, Minca, & Adar, 2012). Potential positive outcomes for school diversity are thought to be more equal access to academic resources, which would foster academic success of students in academically marginalized racial-ethnic groups, and development of more harmonious societal interactions between members of different groups. Negative outcomes assumed by opponents of integration are diminished academic opportunities for European American students, increased conflict or violence. There also has been interest in possible mediators of academic outcomes for youth, including attachment to the school and academic aspirations.

With decades of school integration in place, researchers are able to examine the result of heterogeneous school settings. Typically, these studies have included European American, Latino/a American, African American, and, to a lesser extent, Asian and Native American children, thus reflecting the conceptualization and representation of racial-ethnic groups in the United States. Research in this area has focused on academic achievement, as well as elements thought to mediate the relations between

diversity and academic success, such as conflict between groups (discrimination, aggression, and peer victimization) and individual protective mechanisms including attachment to schools, bonding, self-worth, and racial-ethnic identity.

### Predictors of Academic Success

Predictions related to academic success have primarily been based on assumptions that integration would be positive for children in marginalized racial-ethnic groups, including African American, Latino/a American, and Native American students, and negative for more academically advantaged students. Contrary to expectations, some research has found that more diversity at the school level is associated with greater achievement. For example, reading and math scores were higher in diverse elementary schools in Florida (Borman et al., 2004). In opposition to this finding, Benner and Crosnoe (2011) found that the diversity of elementary schools is not associated with academic success for African American, Latino, or Asian American students, but only for European American students, particularly when there was also a high level of European American students in the school (Crosnoe & Benner, Chapter 7, this *Handbook*, this volume).

Studies at the high school level also are mixed. A larger amount of minority membership in a school is associated with decreased GPA and graduation rates (Ryabov, 2011). In contrast, another study demonstrated that across African American, Latino, Asian, and European American high school students, school heterogeneity was positively associated with GPA and high school graduation (Goza & Ryabov, 2009). This association appears to be mediated by the diversity of the peer network. Noteworthy is that this conclusion offers support for the earlier point discussed—that simply because there is diversity within the school does not necessarily mean that youth are interacting across racial-ethnic groups and that these interactions are the driving factor. Further, peer social capital, including the GPA and SES of the peer group, explains a substantial amount of the academic disparities faced by African American and Latino/a American students (Ryabov, 2011). Important to note is that these associations vary across racial and ethnic groups, with peer group heterogeneity being negative for Asian American students, and differ depending on whether the outcome is GPA or graduation. Moreover, school attachment and experiences in school contexts also are important factors that are associated with academic performance.

### ***School Milieu, School Bonding, and Academic Aspirations***

School attachment is thought to be an important link between the racial and ethnic diversity of a school and academic success by increasing school engagement. Evidence partially supports the theory. For example, students in schools with more members of their racial-ethnic group have been found to feel more attached to schools, in terms of feeling connected to people and the institution itself, and happy to be there (Johnson, Crosnoe, & Elder, 2001). However, this did not translate into attending classes, paying attention, or completing assigned work.

Another theory relating the racial and ethnic composition of schools to academic aspirations and school success proposes that students of minority backgrounds will benefit from exposure to other students with increased expectations related to academic attainment (Benner & Crosnoe, 2011). In contrast, there is evidence that when African American and Latino/a American students are in schools where they are the majority or where the student body is highly diverse, they have higher academic aspirations than in more homogenous schools. European American students also had higher aspirations in schools with more diversity. Of concern, however, is the extent to which being in highly diverse school setting heightens cross-racial-ethnic group conflict among students.

### ***Peer Conflict and Victimization in School Settings***

Expectations related to integration of schools predicted high levels of conflict between groups. Research has examined patterns of conflict between disparate racial and ethnic groups, in the form of victimization or discrimination. This is an outcome of importance in its own right and has also been identified as a predictor of academic success. Both positive interactions and conflict between interracial groups are more likely to occur in schools marked by more diversity (Goldsmith, 2004b). As with academic achievement, it is important to consider the racial and ethnic background of the individual youth within the larger school context, and again, the results of these studies have been mixed. For example, a qualitative study found that experiences of discrimination are common among African American students in the rural South, except in predominantly African American neighborhoods (Berkel et al., 2009). Alternatively, studies conducted in urban locales produced the inconsistent findings, reporting that African American students in predominantly African American schools were more likely to be victimized

(Hanish & Guerra, 2000) and victimized even more in less diverse schools (Juvonen, Nishina, & Graham, 2006). For Latino/a Americans, research has found minimal victimization across contexts (Hanish & Guerra, 2000), lower victimization and higher levels of school safety in more diverse contexts (Juvonen et al., 2006), yet, higher levels of discrimination in more diverse schools (Benner & Graham, 2011). The inconsistencies in findings are likely due to differences in metropolitan status (i.e., urban vs. rural) and measurement, which will be summarized at the end of the section, yet are critically important in understanding youth outcomes as discrimination negatively influences perceptions of the school climate, and in turn, attendance and grades (Benner & Graham, 2011). Other mediators also have been considered to further explain differential effects of school contexts on academic outcomes of youth of color.

### ***Internal Mediators of Conflict and Adjustment***

Perceptions about oneself, including racial or ethnic identity, are thought to mediate the relation between intergroup conflict and youth adjustment. Racial-ethnic identity has been identified as being important for self-esteem amongst members of racial-ethnic minority groups, but not for members of the majority European American population (Phinney, Cantu, & Kurtz, 1997). An important consideration is whether the effect of being a minority in the United States is washed out when a student is in the majority within the school setting. To investigate this question, Umaña-Taylor (2004) theorized that ethnic identity would be less important for Latino students when they were in the majority. In contrast, ethnic identity is protective for students irrespective of the demographic breakdown.

Racial and ethnic composition of both the school and the classroom level may be influential on internal indicators of child adjustment. Diversity at both the school and classroom levels was associated with more self-worth and less loneliness among African American and Latino/a American students (Juvonen et al., 2006). Minority status, however, might be protective when experiencing peer victimization. Graham, Bellmore, Nishina, and Juvonen (2009) found that self-blame was a mediator for the link between peer victimization and maladjustment (i.e., depression and self-worth) across Latino/a and African American students. They then examined the school composition by comparing these effects across contexts where students are in the numerical majority versus minority in the classroom. Consistent with hypotheses, they found that the victimization only leads to self-blame when the student

is a member of the numerical majority. Students in the minority were able to attribute victimization to the global prejudices of the victimizer, whereas power differentials favoring members of the classroom majority group made students who were victimized, despite being a member of the majority, assign the cause of the victimization to themselves. Often not considered in studies examining the contribution of individual level factors association with school related experiences is the role that immigration status plays in forecasting academic outcomes.

### **The Immigrant Paradox**

As noted earlier in the section on acculturation and parenting, accounting for the recent occurrences of family immigration to the United States is important for understanding adjustment among ethnic minority youth. The protective role of connection and identity with one's natal country emerges consistently. Contrary to earlier theories, adolescents born in the United States are at greater risk of adjustment problems than those born in their counties of familial origin, a phenomenon that has become known as the "immigrant paradox" (Escobar, Nervi, & Gara, 2000). Crosnoe and Lopez-Gonzalez (2005) hypothesized that the relation between generational status and academic achievement may be moderated by the context to which adolescents are acculturating. Specifically, acculturation in more advantaged schools would result in improved outcomes over time, whereas acculturation into disadvantaged schools would be associated with more extreme evidence of the immigrant paradox. Consistent with prior research, they found a decline in achievement between the first and second generations of students. Contrary to expectations, the effect of school ethnic composition (measured as proportion of immigrants) has no effect on first-generation students. For second-generation students, being in schools with higher levels of immigrants was even more detrimental for academic achievement. It is worth noting that there is a paucity of studies examining ways in which teachers can affect the school experiences and subsequent academic outcomes of students. In the following section, a summary of studies examining the influential role of teachers is provided.

### **Teachers as Influencers of School Contextual Effects**

Compared to the effects of the racial-ethnic composition of students, the role of teachers in the link between school

composition and child adjustment is a relatively unexplored component of children's developmental relational systems. It has been suggested that teachers in diverse schools may be more effective because they have more training, experience or interest in working to facilitate positive intercultural interactions (Juvonen et al., 2006). Prior research has found that Latino/a American students in schools with more teachers with racial-ethnic minority backgrounds experience less discrimination (Benner & Graham, 2011). Having a teacher of minority background, as well as a high proportion of minority teachers in a school, reduce the amount of conflict (Goldsmith, 2004b). Further, minority teachers have positive effects on students' academic orientation. Latino/a American and African American students are more optimistic and positive about their education and future careers as the proportion of minority teachers increases (Goldsmith, 2004a). The functional substitution hypothesis suggests that the presence of any given resource can compensate for resources that are missing (Crosnoe, Johnson, & Elder, 2004). Often African American and Latino/a American students have less social capital to support themselves in the school context. Consequently, these relations may be more influential across ethnic (European American, African American, and Latino/a American) and gender categories. Students with higher levels of bonding to teachers are more successful, but this effect is especially strong for Latina students (Crosnoe et al., 2004). Further, students in schools with higher levels of their same ethnicity peers have higher levels of bonding with their teachers. Again, this relation was stronger for Latina students. Crosnoe and Benner (Chapter 7, this *Handbook*, this volume) theorized this finding may be due to the fact that Latina students have more to gain from bonding, given that their parents may be less familiar with the United States school context, and they may be more adept than boys due to culturally based gender roles that promote their interpersonal skills. Great consideration has been devoted to addressing the academic disparities among racial-ethnic minority students. Highlighted in many of these studies are the processes through students' developmental systems and dynamic interactions with in school settings promote or inhibit academic outcomes.

### **Summary**

In sum, researchers' findings regarding the role that school contexts play in children's development are marked dramatically by their complexity. To move this area of research forward, future research should examine interactions



between individual-level process variables, such as racial identity, with the composition of their school (Eccles & Roeser, 2011), including how cross-racial-ethnic friendships influence youth developmental systems. Several additional limitations were identified and will be discussed later in this chapter.

### RACIAL-ETHNIC HETEROGENEITY IN FRIENDSHIPS

As previously mentioned, youth spend most of their time in schools. When in school, youth are not only focused on academics but also the development of relationships, which impact emotional, academic, and behavioral well-being. This is particularly true for adolescents who are individuating and separating themselves from their parents and becoming more reliant on and integrated with their peers. Social relationships and connections are important aspects of the human experience (Barber & Olsen, 1997; Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*, this volume). As life course theory suggests, these relationships develop over time and may function differently at various life transitions. The social institutions and settings that individuals, particularly youth, are engaged in have become increasingly diverse, which offers opportunities for interracial friendships (Elder, Johnson, & Crosnoe, 2003). According to social contact theory (Allport, 1954), the increased likelihood that children and youth will encounter ethnically diverse peers on a daily basis should mean that cross-ethnic or cross-race friendship rates will also be on the rise. Consistent with this, cross-ethnic friendships are more common now than in the past (Fletcher, Rollins, & Nickerson, 2004; Graham & Cohen, 1997; Kupersmidt, Griesler, DeRosier, Patterson, & Davis, 1995). In fact, some studies show that the majority of middle school or high school students report at least one cross-ethnic or interracial friendship (McGill, Way, & Hughes, 2012; Hamm, Brown, & Heck, 2005; Kao & Joyner, 2006; Quillian & Campbell, 2003; Way & Chen, 2000). Yet, these friendship types are not the norm (Aboud, Mendelson, & Purdy, 2003; Hamm, 2000). Based on a nationally representative sample of adolescents, youth were 1.8 times more likely to nominate a same-race friend than a cross-race friend (Moody, 2001). Even though opportunities to befriend cross-ethnic peers have increased, students' preferences for homogenous friendships persist (Hamm et al., 2005). Further, European American and Asian American youth are more likely to have same-race friendships (Aboud et al.,

2003; DuBois & Hirsch, 1990; McGill et al., 2012; Quillian & Campbell, 2003; Way & Chen, 2000) than their peers. Given the increasing diversity of schools and opportunities to develop cross-ethnic friendships, same-race friendships remain the norm. Why may this be the case? Accepting the assumption inherent in the similarity hypothesis and social contact theory (Allport, 1954) helps to explain this paradox.

Similarity is a central aspect in the friendship literature and it may be a particularly important selection variable for choosing friends. Ethnic homophily among friends may be the result of selective and primary attention to physical characteristics (e.g., race, age, and gender), truncating opportunities to explore and development friendships based on other common interests (Epstein, 1986; Kandel, 1978; Moody, 2001). Adolescents are not immune from this process, and they may focus on similarity in physical or demographic characteristics as a default (Hamm, 2000; Kandel, 1978; Tolson & Urberg, 1993). Similarity matters most for the deepest and most intimate relationships—close or best friend selection (Hamm, 2000; McGill et al., 2012). However, despite ethnically and racially diverse youth developing in more heterogeneous contexts with opportunity to development friends based on common interests, personalities, and activities that cut across race and ethnicity, children are still more likely to select friends that are ethnically similar to them.

Prolonged interaction or contact with an individual increases the likelihood of the formation of a friendship (Davies, Tropp, Pettigrew, & Wright, 2011; Joyner & Kao, 2000; Quillian & Campbell, 2003). Given the increasing diversity of the United States and the many proximal contexts (e.g., school, neighborhood, and work) that children and youth are involved in, it is plausible to assume that the prevalence of cross-ethnic and interracial friendships will increase and that race and ethnicity will decrease in salience in friendship formation (Lease & Blake, 2005). However, the mere presence of a diverse context does not equate to the development of cross-ethnic or interracial friendships (Allport, 1954; A. M. Pettigrew, 1979; T. F. Pettigrew, 1998) due to the unequal status of racial and/or ethnic groups in the United States (Moody, 2001), prejudicial racial attitudes (Binder et al., 2009; Carr, Dweck & Pauker, 2012; Davies et al., 2011; Margie, Killen, Sinno, & McGlothlin, 2005; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997), and experiences of discrimination (Fordham & Ogbu, 1986; Tropp, Hawi, Van Laar, & Levin, 2012). Given this, how do cross-race or cross-ethnic friendships develop and how do these friendship groups impact socioemotional development during adolescence

and other developmental periods? In the remainder of this section, we review the empirical literature on ethnic heterogeneity in the friendship of children and youth, with particular attention to correlates of cross-ethnic friendships and interracial friendships associations with youth development. We then highlight important and emerging areas of research that will inform our understanding of diverse friendships.

### **Cross-Ethnic Friendships Among Diverse Children**

As already noted, adolescents demonstrate strong preferences for friendships with same-race peers (Kao & Joyner, 2006). A similar pattern is found during childhood, such that African American and European American 8- and 9-year-old girls preferred same-race friends (O'Connor, Brooks-Gunn, & Graber, 2000). Eighty-four percent of European American adolescents and 71% of African American students nominated same-race friends. However, the rates seem much lower for Asian American (42%) and Latina/o American students (34%) (Mouw & Entwisle, 2006) and for Vietnamese students in diverse schools (Chan & Birman, 2009). These cross group patterns suggests that ethnic homophily is more pronounced among African Americans and European Americans. Extant research has not identified the extent to which historical political tensions between African Americans and European Americans drive these differences or variations in diversity of school context for African Americans and European Americans, compared to Latina/o Americans and Asian Americans. However, interesting work has been done to examine patterns of cross-ethnic friendships.

Although ethnic similarity is a powerful predictor of friendship formation, (Hamm et al., 2005), interracial friendships exist. African American and Latino/a American students nominate one another as friends more readily than they do European American friends (Hamm et al., 2005). However, other research shows that ethnic minority youth nominate European American peers more often than European American youth nominate minority peers (Hallinan & Teixeira, 1987; Quillian & Campbell, 2003). When Asian American students nominate other-race friends, European American friends (including European American Latino/a Americans) are the preferred choice (European American students are also relatively likely to nominate Asian American youth as friends) (Quillian & Campbell, 2003). Generally speaking, European American youth are more likely to nominate Latino/a Americans than African Americans as friends, but Latino/a Americans are

more likely to nominate African Americans than European Americans (Moody, 2001). Relative to other racial groups, African American youth tend to be segregated from other racial/ethnic groups in terms of friendships, suggesting that there continues to be a significant divide between African American youth and their non-African American peers (see also Hamm et al., 2005; Kao & Joyner, 2004; Quillian & Campbell, 2003). For example, controlling for the percentage of students of other races or the measure of opportunity, Latino/a Americans and Native Americans were more likely than European Americans to have cross-race friendships, while African Americans and Asian Americans were less likely than European Americans to nominate any cross-race friends (Joyner & Kao, 2000). Therefore, the question becomes, what determines whether an individual will develop a cross-race friendship?

### **Demographic, Contextual, and Sociocultural Correlates of Cross-Ethnic Friendships**

Demographic characteristics such as gender, race/ethnicity, and socioeconomic status play a major role in friendship formation, with friendships in early adolescence being primarily same-race and same-gender (Graham & Cohen, 1997; Graham, Cohen, Zbukowski, & Secrist, 1998; Kuper-smidt et al., 1995). There is a dearth of literature that examines socioeconomic heterogeneity in friendships. Most of this work was conducted in the early 1990s (Aboud & Mendelson, 1996; Billy, Rodgers, & Udry, 1984; Tolson & Urberg, 1993), focuses on adults (Pearson et al., 2006), or has examined socioeconomic status as a correlate to friendship selection (Fong & Isajiw, 2000; Pearson et al., 2006). From the limited available evidence, research suggests that adults are more likely to select friends who have similar socioeconomic characteristics (Billy et al., 1984). Among adults, SES has been shown to impact friendship structure, particularly network size, proximity, and type (Ajrouch, Blandon, & Antonucci, 2005). SES is also associated with a higher likelihood of cross-race/ethnic friendships. In a large sample of Canadian adults aged 18 to 65, Fong and Isajiw (2000) found that SES characteristics (e.g., annual income and education level) strongly predict coethnic friendships. Eighth-through 11th-grade adolescents from suburban schools are less similar on parent education level, an indicator of socioeconomic status, than on other attributes (Tolson & Urberg, 1993). Looking at smoking behaviors among friends, there is more similarity among friends with similar

(as measured by parent's occupation; Eiser, Morgan, Gammage, & Brooks, 1991; Ennett & Bauman, 1996). Parent education level of adolescents is associated with choosing more similar friends for African American youth such that greater similarity is seen in friendships when parents had higher education levels (Hamm, 2000). With pre-school children, Ramsey (1991) found that children are uncertain as to whether people from different social classes could be friends. From qualitative interviews with middle class and 5- to 14-year-old poor children, Weinger (2000) examined how social class impacted friendship choice. She found that 53% of respondents selected a friend within their own socioeconomic class due to what was "normal" (e.g., similarity) and due to a need for sincere and close friendships. It should be noted that these friendships were imagined based on vignettes and depictions of middle class and poor peers using pictures of homes. Nevertheless, given the economic heterogeneity of the United States, it is important for researchers to not only consider how race and ethnicity are associated with friendship formation, but also explore how social class may affect the development of friendships.

Research investigations of factors associated with cross-ethnic friendship formation are quite limited. The scarcity of studies has been attributed to the difficulty children and youth have in discerning an individual's socioeconomic status (Ramsey, 1991). This is due to the way school-aged children (first and fourth graders) utilize visible phenotypic characteristics like skin color to determine friendship choice (McGlothlin & Killen, 2005) and the limited research that systematically examines children and youth's understanding of social class (Weinger, 2000). Nevertheless, given socioeconomic disparities in physical and mental health, researchers should focus on how friendships within and across different social classes may increase social capital and confer positive benefits on health for diverse children and youth.

A few studies have shown that cross-ethnic friends may vary by gender. Specifically, during adolescence, interracial friendships are more often seen with boys than girls (Hamm et al., 2005; Lease & Blake, 2005; Way & Chen, 2000; Way & Greene, 2006). For example, Asian American male students are more likely than their female peers to nominate a cross-ethnic friend (Hamm et al., 2005). However, among elementary-aged (third and fourth grade) children, girls have a higher percentage of cross-race friendships than boys. Further, among all girls (first–sixth grade), social network ethnic diversity is greater than it is among boys (Lee, Howes, & Chamberlain, 2007).

The frequency of cross-ethnic friendships has been shown to relate to the age of youth; however, the research is mixed and the majority of these investigations have been conducted with adolescents rather than children. Various researchers suggest that the frequency of cross-ethnic friendships may increase with age (Hamm et al., 2005), decrease with age (Aboud et al., 2003), or be more common among younger children (Lease & Blake, 2005). Among African American high school students, Hamm et al. (2005) showed that older youth (e.g., 11th and 12th graders) are more likely to have a cross-ethnic friend than their younger counterparts (e.g., 9th and 10th graders). However, Aboud et al. (2003) found that older youth (fifth and sixth grade) have fewer cross-race (40%) than same-race friends (60%), but younger children (first to third graders) have equivalent numbers of both. With rural elementary school children, a trend was found such that younger students are more likely to have a cross-race friend than their older peers (Lease & Blake, 2005). Still, other studies suggest that children tend to play more with same-race peers (Leman & Lam, 2008), prefer same-race friends (DuBois & Hirsch, 1990), or have more same-race friends (Graham & Cohen, 2006). This discrepancy in findings for cross-ethnic peer relationships may result from different operationalizations of friendships. For example, Lease and Blake (2005) examined self-reported cross-race friendships while Leman and Lam (2008) looked at playmates, which may be different from "friends." Further, it is important to note that although school-aged children may prefer same-race friends, it does not preclude these children from establishing cross-race friendships (DuBois & Hirsch, 1990). The settings and environment youth are a part of may influence the degree to which cross-ethnic friendships are formed. For example, several scholars have observed that interracial friendships are more likely to form in heterogeneous environments (Crosnoe, Cavanaugh, & Elder, 2003; Hamm et al., 2005; Kao & Joyner, 2006; Moody, 2001; Quillian & Campbell, 2003). However, with elementary school students, classroom diversity is unrelated to cross-ethnic friendship nominations (Lease & Blake, 2005). Among adolescents, racial heterogeneity of the school increases with friendship segregation or intraracial friendships (Moody, 2001). However, at the most extreme level of school diversity, same-race friendships decrease. These findings suggest that the relation between school racial and/or ethnic diversity is not linear, but curvilinear. This implies that there is a tipping point at which the friendship segregation in schools becomes friendship integration or the formation of interracial friendships. Understanding these tipping points

is important if cross-ethnic friendships and understanding is to be promoted in our school contexts.

In addition to demographic characteristics, researchers have shown other factors such as ethnic identity, racial-ethnic socialization, and perceptions of discrimination to be related to cross-race friendship formation. An individual's internalization of a group identity and the messages she/he may receive about race may be related to the likelihood of cross-friendships. Although limited, most of the work examining this issue has focused primarily on adolescents and in singular research groups. During adolescence, the desire for same-race peers is heightened (Hamm et al., 2005). Hamm (2000), with a diverse sample of high school students, found no association for ethnic identity and cross-ethnic friendship formation. However, Hamm et al. (2005) showed that adolescents with strong in-group preferences are less likely to report any cross-ethnic friends (Hamm et al., 2005). Edmonds and Killen (2009) found that 9th and 12th graders' perceptions of their parents' racial attitudes and messages are related to cross-race friendship formation and parents' reactions to cross-race friendships. Youth who perceive their parents to have negative racial attitudes report that parents are more likely to react negatively to cross-race friendships. Not only does one's ethnic identity and perceptions of parents' racial/ethnic attitudes appear to be associated with interracial friendships, but experiences with race-based discrimination can affect cross-ethnic relationships as well. Based on qualitative interviews with Chinese-, Latino/a-, and Asian American high school students, students' with and without cross-ethnic friendships held different perceptions of discrimination (Rosenbloom & Way, 2004). African American and Latino/a American youth reported feeling resentment over their perceptions of teachers' preferential treatment of Asian American students. Asian American students reportedly felt fearful of their African American and Latino/a American peers who harassed them during school hours. Such feelings caused racial tension, which impeded cross-ethnic friendship formation, especially between Asian American and non-Asian American students.

The focus on economic heterogeneity and friendships is replete. Research in this domain may be limited because of the difficulty children and youth have in discerning an individual's socioeconomic status (Ramsey, 1991). This is due to the way school-aged children (first and fourth graders) utilize visible phenotypic characteristics like skin color to determine friendship choice (McGlothlin & Killen, 2005) and the limited research that systematically

examines children and youth's understanding of social class (Weinger, 2000). Nevertheless, given socioeconomic disparities in physical and mental health, researchers should focus on how friendships within and across different social classes may increase social capital and confer positive benefits for the development of diverse children and youth.

### Cross-Ethnic Friendships and Youth Adjustment

Given that cross-ethnic friendships have been linked with beneficial outcomes in both achievement (Hallinan & Williams, 1990; LaFromboise, Coleman, & Gerton, 1993) and social domains (Hunter & Elias, 1999; Lease & Blake, 2005) and that research in social psychology has shown cross-ethnic friendships can significantly reduce prejudice (Aboud et al., 2003; T. F. Pettigrew & Tropp, 2000), the paucity of research relating cross-ethnic friendships to subjective well-being, psychosocial adjustment, and academic achievement is surprising. Due to exposure, contact, and the development of relationships, cross-ethnic friendships allow individuals to enhance their multicultural competence and expand their social networks. Among adolescents and adults, cross-ethnic friendships reduce friendship conflict, increase friendship support, reduce anxiety about intergroup contact, and improve intergroup relationships. For African American and Latino/a American middle school students, having a cross-ethnic friendship is associated with lower friend conflict (McGill et al., 2012). Among Latino/a American and European American students, cross-race friendships reduce anxiety, as measured by cortisol level (Page-Gould, Mendoza-Denton, & Tropp, 2008). This relation is most pronounced among individuals with high race-based sensitivity (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002). Further, research provides evidence that cross-ethnic friendships are related to school success and adaptation in adulthood as well as more positive intergroup relationships (Davies et al., 2011; Hamm et al., 2005). Having cross-ethnic friendships may enhance one's social capital through extended networks and access to varied resources.

During students' middle and late childhood, researchers have found academic benefits, increased prosocial skills and more peer support in cross-race friendships. Rural elementary school children with a cross-race friend are perceived as smarter than their peers who did not have a cross-race friend (Lease & Blake, 2005). Cross-ethnic friendships are associated with more peer support and less relational victimization (Kawabata & Crick, 2011).



For African American children, cross-ethnic friendships that persist in out-of-the-school context are associated with higher self-esteem (Fletcher et al., 2004). Teachers also see the benefit of these types of friendships, such that youth with more cross-race friendships exhibit more prosocial behaviors (Kawabata & Crick, 2008), including greater racial sensitivity (Hunter & Elias, 1999). Cross-race friendships seem to enhance positive development across the lifespan; however, more research is needed to replicate these findings and explain the mechanisms by which these benefits are conferred. Friendship dynamics is an area that is studied at the individual or dyad level with a focus on individual level characteristics as the impetus for their development. Cross-ethnic and cross-racial friendships, however, are driven by contextual factors, including historical and political antagonisms, as well as perceived and real discrimination, the diversity of the peer sociocontextual and cultural environment, and the extent to which these contexts encourage cross-race and cross-ethnic interactions. For example, with ever increasing technological advances complicating the dynamics of potential cross-ethnic friendships, it is becoming important to examine how “virtual” friendships may be similar and or different from “live” peer relationships. An important domain to examine with regards to ethnic heterogeneity in friendships is social media (Calvert, Chapter 10, this *Handbook*, this volume). Seder and Oishi (2009) examined the degree to which individuals have interracial Facebook friends and how this friendship pattern is associated with well-being. They found that for European American college students, intraracial friendships are associated with more positive well-being; however, this relation did not hold for non-European American (i.e., African American, Asian American, Latino/a, Middle Eastern, or multiracial) college students.

### Summary

Taken together, studies reviewed in this section of cross-race/ethnicity and cross-social class friendships have been linked to numerous positive developmental outcomes for both minority and majority children (Witherspoon, Schotland, Way, & Hughes, 2009). These friendships are thought to the social capital of enhance racial/ethnic minority youth through extended networks and access to varied resources. This is particularly important for those raised in low resource families and communities. Diverse friendships have been associated with increased school success, prosocial behaviors (Kawabata & Crick, 2008),

and greater racial sensitivity (Hunter & Elias, 1999) among majority children and children of varying socioeconomic status. It is worth noting that studies of cross-intragroup friendships do not reflect the experiences of children who are classified as sexual minorities.

## EMERGING ISSUES IN STUDIES OF CHILDREN IN DIVERSE CONTEXTS

As we prepared this chapter, two new areas of research in emerged in our synthesis of extant studies of children in diverse context. A few studies, for example, examined ways in which sexual orientation influences children’s development; and other studies placed geographic spatial patterns as a core element that needs to be considered in studies of children in diverse contexts. A summary of available studies is provided in the following section.

### Sexual Minorities

The implication of sexual identity for children’s development in diverse context has not been well studied. While there has been much concern about the victimization of lesbian, gay, bisexual, transgendered, and queer youth, there is a paucity of studies examining ways in which marginalization as being in the sexual minority influences their development. LGBTQ youth form another population gaining attention due to recent experiences of victimization that have become prevalent in the media. While low prevalence rates make it difficult to examine the effects of heterogeneity in terms of sexual orientation or gender identity, researchers have begun to consider their minority status in schools as a risk factor for victimization and adjustment (Toomey, McGuire, & Russell, 2012). Toomey and colleagues found that 16% of participating students report peer victimization due to gender nonconformity in California schools; there was substantial variability at the school level in perceptions of safety for gender nonconforming students. LGBTQ students in rural areas can feel particularly isolated. Sexual minority status in rural Kentucky was associated with reduced levels of school belongingness, lower achievement, and greater alcohol use (Rostosky, Owens, Zimmerman, & Riggle, 2003). Both sexual minority status and harassment due to that status predicted feelings low self-worth and depression (Martin-Storey & Crosnoe, 2012). In the Netherlands, intergroup contact with sexual minorities led to acceptance of gender nonconformity and, in turn, reductions

in prejudice (Collier, Bos, & Sandfort, 2012). Variability among schools contributes significantly to students' attitudes towards gender nonconformity. Having Gay-Straight Alliances and LGBTQ inclusive curricula is associated with better perceptions of safety for male gender nonconforming peers (Toomey et al., 2012). While the concept of sexual minorities in the field of child development is in its infancy, increase prevalence of sexual minorities in the media suggests the need for greater consideration in studies of child development in diverse contexts. Understanding how these varied contextual experiences interact with children's developmental systems to promote or inhibit developmental outcomes of children is an emerging issue that warrants future consideration. Another emerging issue in studies examining the role of context on child development is the changing geographic spatial residence patterns of children of color in every region in the United States.

### **Spatial Residence Patterns of Children**

According to demographers, the distribution of racial ethnic minority children and their families is spatially broad. The highest proportion of families of color resides in urban areas, with noticeably increased population growth in southern, southwestern, and western regions of the United States. The population of children of color and their families is concentrated in six states: California, Texas, Florida, New York, Illinois, and Georgia. Further, many states are witnessing a major decline in percentage of European Americans, which fell below 60% in Hawaii, New Mexico, California, Maryland, Georgia, Nevada, and the District of Columbia (Johnson & Lichter, 2010).

Examination of demographic distribution patterns of children in rural communities reveal that the majority of children are non-Latino/a American European Americans, primarily residing in the Appalachia regions of the United States, which stretch from southern New York to northwest Mississippi. African Americans and Latino/a Americans, on the other hand, are more likely to reside in rural communities in the South, Southwest, and Midwest regions of the United States (Lichter & Campbell, 2005). Residence concentration comparisons of African American and Latino/a Americans residing in rural regions reveal that the majority of African American children are more located in the Black Belt, which runs from North and South Carolina through Georgia, Tennessee, Alabama, Mississippi, Arkansas, and Louisiana. Rural Latino/a American children are more heavily concentrated in Texas,

where in some counties they exceed 50% of the population (Albrecht, Albrecht, & Murguia, 2005). In addition, many of the rural Latino/a American children in rural communities reside in families of recent immigrants (Jensen, 2008). Two groups of children that are often included in studies of children in rural communities are American Indian and Asian American children. American Indian children are more likely to reside on reservations in the Southwest and Northern Plains, whereas rural Asian American children, representing approximately 14,000, primarily reside in the rural Midwest and West.

Increased concentration of racial and ethnic diversity in certain states and townships does not necessarily mean that communities at the town or neighborhood level are integrated and diverse. In fact, the majority of communities remain segregated with few opportunities for daily interactions between youth and families with different racial, ethnic, and cultural backgrounds (Economic Research Service, 2005; Lichter et al., 2010).

The United States is witnessing geographic divides that are not only decreasing opportunities for racial and ethnic mixing, but also will increase economic gaps between high resource and low resource communities and neighborhoods. Spatial inequalities and changing geographic distribution of families increase the likelihood that rural children of color will continue to be disproportionately poorer than nonrural European American children (Friedman & Lichter, 1998). Thus, children growing up in the United States (and thus the population) are increasingly diverse in their individual characteristics and grow up in increasingly diverse contexts; the field of human development can no longer relegate issues of diversity and context to people of color. The changing demographics and neighborhood settlements of families in the United States are impacting the course of all children's growth and development.

### **REFLECTIONS, CONCLUSIONS, AND SUGGESTIONS FOR FUTURE RESEARCH**

The explosion of diversity occurring in every state in the union will cause a major population shift in our country by the year 2025 (Fry & Passel, 2009). One out of every three Americans is a person of color (U.S. Census Bureau, 2010). At the intersection of population growth of minorities in the United States is the booming population of youth in the vanguard of America's diversity. Yet, research studies of child development from 2000 to 2012 continue to presume that generic conceptions of race/ethnicity and

poverty are useful constructs to capture the collective experiences of non-European American children residing in the America.

Our review examined the intricate and complex ways in which children's context varies as a function of race, ethnicity, immigration status, geographic residence, and socioeconomic status. The ecological theory and other frameworks selected to guide our review offer support for the importance of recognizing that *all* youth are nested in interlocking developmental systems that are influenced by broader social contexts, culture, history, and time (Bronfenbrenner & Morris, 2006). Thus, in order to understand human development it is essential to consider the processes through which systemic changes in a child's social environmental settings are influenced by broader and proximal social interaction.

Based on this theoretical perspective, several noticeable patterns emerged in our review. As expected, studies of children in diverse contexts are marked most dramatically by the continued use of the terms race-ethnicity to understand various domains of adjustment and development. Further, ethnicity and culture are often used when studies focus on acculturation and ethnic socialization among Latino/as or transracial adoptions. Yet, all children are exposed to cultural socialization (Gonzales et al., 2002), as a normative process through which children become functional members of their society (Farver et al., 2007). Parents of color, however, are confronted with the challenge of adapting their parenting to effectively achieve their goals for acculturation, enculturation, and safe navigation of the contexts in which they live. Variability in cultural/ethnic/racial socialization, however, may be influenced by the extent to which parents internalize ideologies and practices of their own culture and the dominant culture. Still, none of the studies considered ways in which cultural context influences non-Latino/a American children's development, such as African American, American Indians/Pacific Islanders, Asia American, or European American children. When children are studied only in one racial/cultural context, broader aspects of development and family dynamics are assumed to be "natural" or "universal." It is only when human development and family processes are studied in diverse contexts that true culturally embedded aspects emerge (Cole, 1996).

A major context that is needed to more fully understand child development is the proximal relational processes that emerge through parental socialization. Socialization is the process through which individuals learn and internalize the ways of being, interacting, and knowing that they are

represented in their own culture (Gauvin & Parke, 2010). A plethora of studies have examined the role of parenting in child development, with specific attention given to differential effects of parental discipline on children. There are consistent findings that stricter parenting practices are often found to be associated with more positive developmental outcomes for immigrant and ethnic minority youth (Chao, 1995; Hill, Bush, et al., 2003; Ispa et al., 2004) when compared to European American children. Both contextual and cultural effects have been offered as plausible explanations for these differential effects. Many minority children grow up in high risk situations that influence parenting practice, requiring greater control and monitoring because the potential costs of their child making a mistake are high (Berkel et al., 2009; Hill, 2009; Murry et al., 2009). In addition, cultural contexts not only influence the meaning of parenting but also serve as a foundation for belief systems and parent's desired goals and expectations for their child. These processes may change over time through the synergies that emerge as a by-product of parental efficacy and confidence. Parenting practices are dynamic processes that are formed through representations of their belief systems and worldview, and manifested through cognitions that are exhibited as parenting practices. The extent to which this evolvment is associated with plasticity in children is an area that has been understudied. Future studies in this area offer advancement in several domains and will hopefully explain how parents' definition of parenting is linked with balancing the adoption of ideologies and practices of the dominant culture while maintaining those of one's culture (de Haan, 2011), and which in turn will explain variability in the association between parenting and child development.

Several studies have been conducted to understand how and why acculturation among younger generations of immigrants is associated with increased vulnerability on multiple domains of development and adjustment—achievement, mental health, and behavioral outcomes (García Coll & Marks, 2011). Increased enculturation and acculturation among later generations has been labeled the "Immigration Paradox." Because culture, most broadly conceived, is understood to reflect the nature of the context in which one lives, a fuller understanding of acculturation and parenting must include the ways how parenting and children's development are impacted by the host cultural values and expectations, the culture of origin, and the more immediate context in which the family lives (e.g., neighborhood, economic, ethnic diversity). Given this need, future studies are encouraged to disentangle the

influences of immigrant status, ethnic minority status, and economic status from culturally based influences (Chao & Otsuki-Clutter, 2011; Hill, 2006).

The extent to which these developmental systemic changes are similar or dissimilar among parents raising children of color, including those raising multiracial children (Brunsma, 2005) and parents of transracial adoptees group (Brodzinsky & Pinderhughes, 2002; Vonk & Angaran, 2001) need further consideration. Unique to transracial adoptive parents is the fact that their contexts are more likely to include dynamic interactions with legal and international institutions within and across cultural influences. Little is known about how these experiences affect parenting and transracial adoptive children's identity, psychosocial adjustment, and behavioral outcomes. Further, conceptual frameworks beyond mainstream developmental theories and traditional conceptual models of parenting are needed to guide future studies. Finally, the processes through which *all* parents raising children in diverse contexts negotiate and navigate parenting are not well understood (Fuller & García Coll, 2010; Lopez et al., 2010).

The centrality of other social contextual relations also was observed, namely school and peer relations. Diversity explosion in the United States increases the likelihood that children will be educated in a multicultural context with opportunities to interact with diverse groups of students and teachers. Findings from our review for this chapter indicate the fact that "all the Black kids [are] sitting together in the cafeteria" (Tatum, 2003) continues to reflect not only friendship patterns of African Americans, but also those of most students in the United States. In-group friendship should not be a surprising phenomenon because similarity facilitates and promotes relational processes. Intimate relationships including friend selection are based on homophily among those with whom we have contact (Moody, 2001). An abundance of studies have linked cross-race-ethnic friendships to several positive developmental outcomes, including increased race-based sensitivity (Mendoza-Denton et al., 2002), positive subjective well-being, psychosocial adjustment (Lease & Blake, 2005), reduced prejudice (Aboud et al., 2003; T. F. Pettigrew & Tropp, 2000), and lower peer conflict (McGill et al., 2012). Cross-ethnic friendships also have been associated with long-term positive development and adaptation in adulthood (Davies et al., 2011; Hamm et al., 2005). Replicative studies are needed to confirm these findings. In addition, the mechanisms by which cross-peer friendships are made beneficial remain unknown.

Resolving this issue is particularly important given that findings supporting the benefit of integration for child development are mixed, especially in predicting the academic success for African American, Latino/a American, and Asian American students. Diversity of student population was only associated with increased academic success for European American students, not youth of color (Benner & Crosnoe, 2011). This lack of positive academic outcomes for youth of color was mediated by diversity of peer network. This suggests that attending a mix-race/ethnic school, in and of itself, does not forecast academic success; the dynamic relational interactions are the driving force in this developmental system. Mixed race-ethnic schools provide a social-environmental setting for members of race-ethnic groups to feel connected to students and their school. However, this interactional process does not translate into increased academic performance (M. K. Johnson et al., 2001), but this context does foster increased self-worth and less loneliness among African American and Latino/a American students (Juvonen et al., 2006). Diverse schools and classrooms, on the other hand, do matter when youth of color are in the majority or when the study body is highly diverse, and result in higher academic aspirations. Studies examining other developmental outcomes of diverse school context found reports that Latino/a American students experience more discrimination as school diversity increased, which negatively influenced their perceptions of the school climate and, in turn, their attendance and grades (Benner & Graham, 2011). Further, perpetration of aggressive behavior across students categorized, including European American, African American, and Latino/a American students, increases as school diversity increases (Rowe, Almeida, & Jacobson, 1999). The sporadically consistent and incomplete nature of these studies highlights the need to further understand the contributions of the interlocking dynamic relational systems in school contexts on child development.

It is noteworthy that a few studies have shown that racial and ethnic composition of both the school and the classroom level not only affect academic related processes, but also aggression and peer victimization, as well as internal indicators of child adjustment. In particular, having a teacher of minority background, as well as a high proportion of minority teachers in a school, reduces racial discrimination experiences, race-ethnic peer conflict, and fosters increased optimism, academic orientation, and future career opportunity perspective among Latino/a American and African American students (Goldsmith,



2004b). It was suggested that the positive influential role of teachers in diverse schools may be attributed to training, experience, or interest in working to facilitate positive intercultural interactions (Juvonen et al., 2006). A final note regarding school context and child development is the lack of consideration given to dynamic relational interaction process variables and school context. The work of Umaña-Taylor et al. (2013) provides a model for future consideration. This model examines the moderating impact of heterogeneity of school context on the relation between parental socialization and ethnic identity development in Mexican American youth to offer support for the contributions of school context as a platform for adolescents to process ethnic socialization messages from their parents. Further, Eccles and Roeser (2011) provide a study of the interactions between individual-level process variables, such as racial identity and the composition of a school that is also informative.

A common finding across these studies is that while all students in a mixed race/ethnic school benefit when teachers reflect the diversity of the school milieu, Latino/a (male and female) students and African American males benefit more. These findings offer strong support for the premise that school contexts for children's development are marked most dramatically by their complexity. To advance this area of study, there is need for clearer understanding of how school composition influences development. An urgent matter observed in our review is the need to address measurement flaws regarding how school composition is calculated in terms of assessing the overall diversity of schools, obtaining proportions of different racial-ethnic groups and/or student/teacher ratio of schools, assessing presence versus absence of same group peers, or determining a proportion of majority at a given school. For example, school composition measurement varies greatly across studies, including studies that assess the overall diversity at a school (the likelihood that two students pulled at random would represent the same racial-ethnic group), the balance of different racial-ethnic groups, the proportion of same-group students/teachers at a school, the presence versus absence of same group peers, and the proportion of majority students at a given school. Each of these ways of measuring school composition appears to be conceptually different, yet equally important. In this regard, the effect of homogeneity of a school on developmental outcomes for an African American student would likely be very different depending on if the school population was homogeneously African American or homogeneously European American.

Several limitations were observed in the breadth of our review. First, none of the studies examined the mechanisms through which social stratification influences child development or in which socioeconomic status was conceptualized as a core contextual factor of child development. The majority of studies focused on economic segregation, specifically the consequences of poverty for development of children of color. Across multiple domains of child development, studies continue to collapse distinct racial-ethnic groups who would not realistically affiliate with one another (e.g., Latino/a Americans and Asian Americans) (Bellmore et al., 2007; Umaña-Taylor & Fine, 2001), given their unique customs and histories that are often marked by significant conflict (e.g., Taiwanese and Chinese) (Bellmore et al., 2007). Further, studies of children of color continue to target those residing in urban, low-income settings, without regard for ethnic-racial population concentration. Residential housing, income, and population segregation are often confounded with demographic factors such as immigration status and neighborhood resources, both closely associated with children's developmental outcomes.

Efforts to eliminate this limitation may be aided by the advancement of methodological approaches in research design, in particular identifying ways to standardize methodological approaches and strategies by more fully understanding how measures of race/ethnicity and socioeconomic status uniquely or collectively contribute to child development.

Another limitation observed is that none of the studies specified how socioeconomic status or even poverty influence children's immediate environment. For example, how does poverty cascade through a child's family to affect her/his development, such as the mechanisms through which parental unemployment or underemployment influence the developmental trajectories of children growing up in low-resource families and communities? We did note, however, that studies of socioeconomic status were often narrowly focused on examining the consequences of poverty for a plethora of negative outcomes for children, such as linking low parental education with deviant peer affiliation or determining whether children of higher socioeconomic status (exclusively European American) are willing to explore friendship formation with those of low-income backgrounds. In fact, comparative studies of development among middle-class children of color are nonexistent, and only a few studies of low-income European American youth exist. Given this, little is known about youth developmental outcomes in predominantly

same-race/ethnicity or mixed-race/ethnic environmental settings of varying social economic status. The lack of attention to these issues has led to the inability to specify models to account for the contribution of socioeconomic status, both intragroup and intergroup, in developmental competences of children, both nonminority and minority.

We end our chapter by acknowledging that much work is needed in the field to adequately understand how contextual effects of social class, culture, ethnicity, and race affect a child's development. The continued use of the terms *race* and *ethnicity* as category variables to capture the experiences of children of color dilutes and obscures important moderating effects of ancestral heritage, immigration history, religion, and traditions of normative and maladaptive development (Lin & Kelsey, 2000; Mio et al., 1999). Given this, the challenges set forth many decades ago by García Coll et al. (1996) to guide the study of children of color and those of low-income background remain. Most notable is a lack of progress in identifying the unique normative processes of development among children of color. Thus, the field continues to grapple with identifying critical aspects of these children's social environmental contexts that have profound influence on their growth and development. An observed pattern in our review is that instead of identifying factors and processes that explain the contribution of social stratification for children's growth and development, most studies use race-ethnicity and poverty as proxies of developmental contexts of child of color. The use of these constructs perpetuates the marginalization of these children and is based on the perceived notion that their development is primarily a function of their social positions and socioeconomic status. To advance the research agenda on studies of children in diverse contexts, more consideration needs to be given to documenting the processes through which discrimination and marginalization cascade through children's developmental systems and affect not only their social interactions, but also development over the life course. The negative consequences of institutionalized racism for people of color have been well documented, however, manifestations of broader contextual effects of discrimination (i.e., work force, legal, housing, education, health care systems) for child outcomes have not been adequately included in studies of children of color. As racial-ethnicity, transracial-ethnic, transracial adoptee, Third Culture Kids, low-income, inner-city, rural, and sexual minority youth growing up in the United States, social positions and social stratification are core components of children of color development. Given their salience, greater understanding

of factors and processes that promote optimal development among children in diverse social contexts is needed. For example, realms of competencies may include adaptive coping with marginalization as a consequence of phenotypic characteristics, transracial adoption, multiracial histories, language, culture, place of residence, and family income. In closing, the diversity explosion in the United States increases the likelihood that all children's development will occur in a multicultural environment. For this reason, we charge the field to give greater consideration to identifying the mechanisms through which social positions, social stratification, and places of residence for *all* children, and not only for children of color, forecast both normative and nonnormative child development.

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## CHAPTER 12

# Children's Housing and Physical Environments

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## OVERVIEW

Children live in a world dense with actions, objects, people, and events. Through time these phenomena provide the structure for development and the ingredients that help determine its course. Children actively engage the people and things resident in the places they inhabit. They are not mere passive recipients of whatever a setting contains. Indeed, children help determine what they encounter. But what children do and what it means for long-term development depend on what those places contain. This chapter is about children's intimate surroundings, their content and structure, with a particular focus on housing and the physical environment. Some attention will be given to social aspects of environments, but mostly to highlight the connection between physical circumstances and social interactions.

In this chapter attention will be given to various aspects of the houses children live in and the natural and built environments surrounding them, with a view to explicating how each is implicated in children's behavior and development. The chapter begins with a consideration of several conceptual frameworks that bear upon *how* children might experience the structures, objects and sensory stimuli in places where they spend time and *what* those experiences might mean for their health, competence and adaptive functioning. Thereafter, is a review of what is known about various aspects of housing conditions and the nearby physical environment, with attention to how each may affect children's behavior and well-being. The third section moves beyond a consideration of particular aspects of the environment to a consideration of overall environmental chaos (i.e., how the structure of events and conditions in space and time affect

health and behavioral tendencies). The chapter concludes with an effort to put issues pertaining to the physical environment in historic context, with a view to the future.

Housing and the nearby environment contain so many elements, it would be impossible to fully review all or to adequately integrate what is known about the interplay of child and environment. Accordingly, I have chosen to focus on those aspects of children's housing and physical environment that research indicates have a measureable impact on children. In the process there has been an effort to consider multiple aspects of well being (health, competence, and adaptive functioning) and to consider how exposure to certain environmental conditions may have implications for multiple aspects of overall well-being at various periods of development, consistent with ecological-developmental theory and general systems theory.

## CONCEPTUAL FRAMEWORKS

The section begins with a consideration of several conceptual frameworks that bear on *how* children might experience the structures, objects, and sensory stimuli in places where they spend time and *what* those experiences might mean for their health, competence, and adaptive functioning.

### Historical Ideas About the Affordances of Settings

It has long been recognized that human environments are complex and include a diversity of resources arranged in a multitude of ways (Chen, 1993). Anthropologists, biologists, sociologists, or psychologists (scientists from other disciplines as well) have carved up the environment into components considered salient for human behavior and functioning. Each scholar has conceptualized the interplay between people and their environments in ways deemed critical toward a given end (Weems, 1999). As useful as many of these efforts have been, almost all the scientists who have studied the interface of humans and their environments would admit that scholars typically consider only part of what is a very complex and dynamic interplay of people, places, and things. Efforts to separate organism from environment are understandable—even useful to a degree—but misleading. We are part of the larger network of things and people with whom we interact: We are environments. We are hosts to myriad bacteria, viruses, parasites, and the like. It is not the purpose of this chapter to dwell on the complexities of human-environment interplay or to provide a more inclusive model of this interplay.

Rather, the point is to make clear at the outset that anything said about children and their physical environments should be evaluated in terms of the inseparability of human action from the circumstances in which it occurs and the deep connection between experience and development through time. For this reason, the notion of environmental affordances, introduced by James Gibson (Gibson, 1982), would seem to have utility.

The affordances of the environment are its *functionally significant* properties, considered in relation to a particular individual (Heft, 1993). An environmental affordance is something perceivable and psychologically meaningful to the individual; that is, it is something that is relevant given that humans engage in actions directed at psychologically meaningful goals. But this conception is probably a bit too narrow to cover all types of human needs and goals (Wachs, 1999). Affordances are not exactly properties of the environment per se (Chemero, 2003). Rather, affordances pertain to relations between features of the environment and the capacities and proclivities of humans that encounter them. The exact same physical feature or arrangement of features may provide a different set of opportunities or challenges to different children, depending on age, gender, health status, culture, personal history, or the other features present. Accordingly, knowing the contents present in a given setting does not fully determine what the setting affords a particular child by way of promoting or hindering a given developmental goal.

How a particular affordance of the environment is engaged depends on what an individual brings to it, including the individual's prior learning and history of social experience. Kyatta (2002) connected the idea of affordances to ideas about different types of actions people take: free or spontaneous actions, promoted actions, and constrained actions. The latter two types of actions are often informed by culture (see Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume) or social networks, which may help establish the value or appropriateness of the actions. When circumstances change, such as when a family moves or a community provides new types of infrastructure, the affordances of particular environmental features may change as well.

### Engagement and the Construction of Life Niches

Neufeld et al. (2006) proposed that engagement is the force that mediates the person-environment unit; that is, engagement is the hub of what affordances mean as regards human development. The level, type, and constancy of

engagement determine what results from the interplay of person and environment. Engagement has three components (negotiation, participation, and evaluation), which together determine the outcome in any person-environment encounter. Negotiation refers to an ongoing process during a person-environment interaction in which both the individual and features of the environment make adjustments to accommodate each other (i.e., establish a degree of person-environment fit). Negotiation is most prominent with respect to social aspects of the setting. Participation is the degree of positive interactions between a person and features of the environment in the psychological, physical, and emotional domains. Participation involves the degree to which a person's capacities and predilections are activated during encounters with the resources and structures presented in the environment. Evaluation consists of the individual's appraisal and emotional responses to interactions with the environment. To the degree that participation is strong and evaluation is positive, the degree to which environmental affordances support positive development is high.

Children are constantly in the process of constructing their own idiosyncratic life niches. Life niches result from attempts to satisfy simultaneous constraints attributable to one's own abilities, desires and temperament, and situational presses and affordances (Tesser, 2002). The life niches perspective highlights the importance of interactions between self and settings as regards the path of development. According to self-determination theory, humans need environments that promote competence, relatedness, and a sense of autonomy (Ryan & Deci, 2000). Such environments maximize the expression of intrinsic motivational tendencies; and in so doing promote task persistence, subjective well-being, and better assimilation of the individual to critical social networks. In effect, settings that are relatively rich in resources and that are relatively easy to negotiate (i.e., that have meaningful structure but do not pose too many constraints) are likely to provide the most supportive life niches for children.

### Dynamic and General Systems Theory

Wachs (1999) contended that a given niche is not equally available for exploitation for all those who inhabit it; nor does everyone in a niche have an equal level desire or wherewithal to exploit the affordances the niche provides. For example, the organization of materials within a niche may privilege some inhabitants more than others, as may social expectations and constraints. Not only

do present circumstances matter as regards how much a given niche affords a person by way of opportunities for enhancement and development; but the individual's history of prior experience in that niche can do so as well (the chronosystem as described by Bronfenbrenner, 2005). Most ecological-developmental theories depict human beings as self-stabilizing. Niches can act to promote such tendencies or to disrupt them. In the first case, they will help consolidate behavior tendencies and maintain expectations as regards oneself and one's goal pursuits. The second situation will move the individual toward withdrawal or behavioral adaptation (perhaps even toward a change in stable central attractors to use the nomenclature of dynamic systems theory). Part of the response to any given niche at any given point in time will depend on how many niches an individual tends to engage in and through time and the consistency of affordances in those niches. A person's response also depends on the breadth of skills the individual brings to the niche. The greater the number of positive valences a niche contains, the greater the likelihood of good person-environment fit and the greater the likelihood of optimal development. The reverse is true for niches that contain a high level of negative valences—especially if the individual is restricted to only that or similar niches.

### Coping and Adaptation

When a situation is perceived as threatening or just highly challenging, a number of psychobiological processes may be invoked. An individual's efforts to adapt to the demands of the situation often proceed through a series of stages. Theorists differ on precisely how to categorize various forms of stress and coping processes. However, there is general agreement that when individuals are unable to engage sufficiently powerful internal and external supports to overcome the challenges present, there are likely to be negative psychological and biological consequences (Repetti, Robles, & Reynolds, 2011). Settings vary not only in the extent to which they present threats and challenges but also in the extent to which they contain features that increase the likelihood of adaptive and effective responses from an individual.

Central to successfully coping with threats and challenges is the expectancy that one is able to cope with them (Prilleltensky, Nelson, & Peirson, 2001); that is, one can exercise some manner of personal control to effect a desired outcome. Those expectancies derive both from the physical and social features present in the situation



and from the person's sense of control regarding them. A positive expectancy, "coping," arises when a person concludes that he or she can handle the situation with positive results. By contrast, when the individual concludes that there is no relation between anything he or she can do and the outcome, an acquired expectancy of "helplessness" emerges. This sense of helplessness can generalize to other situations and settings to the detriment of the individual. When an individual concludes that most or all responses lead to a negative outcome, the acquired expectancy is "hopelessness." Hopelessness and coping share one key attribute; specifically, the sense that one can exercise some measure of control. The difference is that hopelessness derives from the sense that no matter what one chooses to do, the result will still be negative.

### Life History and Lifestyle Analysis

Children grow up in wildly different settings. Settings can change markedly through childhood. What the settings afford by way of challenges and opportunities creates substantially different prospects for the development of particular competencies, motivational tendencies, behavior patterns, and health. Children are active agents and meaning makers. As a consequence of increasing competence and experience, children do increasingly more to select and reconstruct the environments they encounter as they age. There is negotiation and co-evolution. For example, Min and Lee (2006) found that children living in large high-rise high-density planned neighborhoods placed high value on nearby park areas because those places supported behavior the children wanted to engage in. That said, some environments are so resource poor, disorganized, and threatening that they discourage agency and undermine coping. In any case, the person-environment interplay produces a life niche that has consequences for developing both a sense of agency and coping skills.

The places one inhabits penetrate to every level of psychobiological functioning. Medical researchers (see Zuckerman & Keder, Chapter 15, this *Handbook*, this volume) have joined with historians (see Stearns, Chapter 20, this *Handbook*, this volume) and anthropologists in an effort to better understand how experiences in varied environments over the life course have consequences for such health issues as immune function and inflammation, as both represent types of adaptations to physical and social affordances within a context. As human environments have changed and as human patterns of mobility and lifestyles have shifted (each resulting in changes in

exposures to various pathogens), local and global rates of various diseases have likewise shifted (McDade, 2003). In some cases an attribute of the physical environment (e.g., cleanliness), can have positive consequences for some health conditions (lower rates of certain communicable illnesses) but negative consequences for others (higher rates of certain atopic illnesses) (Platts-Mills, 2005). Similarly, an object (e.g., a TV) that generally has a positive valence for some aspects of adaptive functioning (i.e., it could lead to learning or skill development) could also have a negative valence as regards other aspects of adaptive functioning (i.e., it could lead to lower levels of physical activity, which increase the potential for inflammation and obesity) (Corbo et al., 2008). In sum, theory and research pertaining to lifestyles and life history are beginning to illuminate how spending time in certain kinds of places has implications for adaptive functioning in multiple domains of development.

### Summary

In his seminal article on complex adaptive systems, Holland (1992) argued that humans operate by no single governing equation. Humans are constantly evolving in ways that help them adapt to their environments. Because humans are complex adaptive systems engaged in ongoing interplay with complex environments, it is difficult to construct a theory that adequately explains why people behave the way they do or precisely predicts an individual's developmental course. Even so, humans are governed systems and operate in accordance with rules; and they use internal models to anticipate the future, basing their actions on an assessment of the affordances present in any circumstance and their anticipation of expected outcomes. To do well, children need well-structured, manageable, and sustained exchanges with people and objects in their immediate surroundings. Otherwise they experience stress and fatigue, which leads to withdrawal or negative patterns of behavior. Children also need the skills to cope with whatever challenges their surroundings present and that allow them to construct supportive life niches (Prilleltensky et al., 2001; Repetti et al., 2011). There is ongoing renegotiation with the physical and social elements present in environment aimed at a good (a.k.a., adaptive) fit (Neufeld et al., 2006). There is no one theory, or simple blending of theories, that fully captures this ongoing process of person-environment interaction and how it determines a child's course of development. Each of the conceptual frameworks discussed in this section would seem to usefully inform

research that captures part of the evolving process. The engagement model of person-environment interaction (Neufeld et al., 2006) would seem especially useful as it is specifically directed to understanding how individuals evaluate and negotiate the path toward person-environment fit. Integrating of ideas from self-determination theory (Ryan & Deci, 2000) might help expand the boundaries of current research on person-environment fit in ways that are especially helpful in a rapidly changing world. Self-determination theory (SDT) derives from notions concerning people's inherent growth tendencies and innate psychological needs. In effect, optimal fit between person and environment can only occur when the affordances of the environment allow for the realization of these tendencies and needs. In the sections that follow, research pertaining to how various aspects of housing and the physical environment are implicated in children's behavior and development will be considered from the vantage point of these theoretical frameworks, together with more general theories of learning and motivation.

## HOUSING QUALITY

In this section attention is given to various aspects of the houses children live in and to the natural and built environments surrounding them, with a view to explicating how each is implicated in children's behavior and development. The review begins with a broad consideration of housing quality, including such things as construction materials and interior facilities. Specific attention is given to spatial arrangements, including crowding and esthetics. As well there is attention given to potentially noxious indoor conditions such as dampness and noise. Special consideration is given to toxic exposures more generally as well as to surrounding conditions. The final portion of the section focuses on the various objects and materials contained within the home that potentially support children's development and adaptive family functioning.

### The Accoutrements of Place

For decades, scientists, policy makers, artists, and humanitarians have addressed issues related to housing quality and its effects on human behavior and well-being. There are classic depictions in novels, movies, and religious documents. Access to adequate housing remains a centerpiece of geopolitics, being enshrined in the United Nations' Millennium Goals. According to the most recent report, there

has been a decline in the percentage of urban dwellers that continue to live in substandard houses, where there is poor construction, inadequate access to water, poor sanitation facilities, and overcrowding (United Nations, 2012).

Relatively elaborate assessment procedures have been available for characterizing housing quality for nearly half a century. These evaluation schemes typically include a consideration of the type of construction materials used and the diversity and quality of facilities contained within the residence (N. E. Johnson & Nelson, 1984). In some cases, the evaluation instruments focus exclusively on the residence itself. In other cases, there is a consideration of what is available in the nearby environment as well (Moughalu, 1991). The latter represents a more accurate instantiation of "home life" for children and adults as proposed by ecological developmental systems theorists and anthropologists (Altman, 1977; Leventhal & Newman, 2010). The more expansive view incorporates as a central notion the idea that places are most usefully understood in terms of the activities and perspectives they afford (Weisner et al., 2001).

Moughalu (1991) argued that an assessment of housing quality should include a detailed consideration of three aspects of the physical environment connected with a person's place of residence: (1) the structural materials used to compose the roof, walls, and floors; (2) interior facilities for water, cooking, bathing, and sanitation; and (3) facilities and amenities in the surrounding neighborhood. Many concerned with overall health and social justice have made similar arguments (Kutty, 1996; Yongsu & Ntetu, 2008), especially researchers concerned with health conditions that increase child mortality, such as diarrhea (Mock, Sellers, Abdoh, & Franklin, 1993; Woldemicael, 2004). In a study done in Cameroon, Yongsu and Ntetu (2008) found that a composite index of housing quality was associated with the level of childhood diarrhea (19.9% prevalence rate in high-standard homes versus 49.2% prevalence in low-standard homes). Even in the United States, where there is less concern about issues connected to slum dwelling and lack of access to community facilities such as potable water and sewage treatment, the most recent American Housing Survey included a broad spectrum of indicators pertaining to household facilities, provisions for safety, and general neighborhood conditions (U.S. Census Bureau, 2008).

### Construction Materials

Research done in less developed countries has often focused on relations between child health and the types

of materials that compose roofs, walls, and floors. In Tanzania 89% of rural homes and 29% of urban homes had dirt floors in 2004. Correspondingly, 63% of rural homes had roofs made of grass or leaves, whereas 87% of urban homes had roofs made of iron—neither of which provides appropriate protection from the weather (Delamonica & Minujin, 2009). Using data from 85 UN-sponsored Demographic and Health Surveys, Montgomery and Hewett (2005) estimated that roughly half to about 95% of urban households in Latin America, North Africa, Sub-Saharan Africa, Southeast Asia, West Africa, and South and Central Asia had finished floors. In a multivariate model that included a diverse array of demographic variables, Guatemalan children living in houses with dirt floors were at increased likelihood of being short and underweight (Pebbley & Goldman, 1995). One of the main problems with poorly constructed homes is that there is increased likelihood of exposure to rodents, mosquitoes, and other carriers of disease (Bonner et al., 2007).

### Disrepair

Even when the construction materials used to build a home are adequate, houses in disrepair are more likely to also have roach and rodent infestations that can lead to health problems (Bradman et al., 2005; Nriagu, Martin, Smith, & Socier, 2012). Asthma rates also appear to be higher in homes with high levels of deterioration (Nriagu et al., 2012; Suglia, Duarte, Sandel, & Wright, 2010). Parents living in dilapidated homes were also more likely to show signs of depression (Evans, Wells, Chan, & Saltzman, 2000; Wells & Harris, 2007). However, it is critical when looking at the impact of disrepair to recall reverse causation. Adults with mental illness or limited cognitive skills may more often move into poor quality housing or allow it to deteriorate. Given that the United States has one of the highest GDPs in the world, some may be led to believe that few homes are in serious disrepair. However, the Annual Housing Survey of 2007 estimated that 37% of dwellings have at least one consequential problem pertaining to external conditions (U.S. Census Bureau, 2008).

### Provisions for Water and Sanitation

The World Health Organization (WHO), in cooperation with the UN Children's Fund Joint Monitoring Programme for Water Supply and Sanitation (2008) estimated that only 58% of people in sub-Saharan Africa had access to improved drinking water sources (i.e., either piped into

the home or from other nearby sources such as public taps, tube wells, boreholes, protected dug wells, protected springs, or rainwater collections). About 70% of households in Lima, Peru, had water in the home (Meng & Hall, 2006). Children without access to clean water and proper sanitation are at much higher risk of diarrheal diseases and for waterborne diseases such as cholera and enteric fevers. There are also more likely to have heavy worm and parasite burdens and an array of skin and eye diseases (Bartlett, 2005). Not surprisingly, mortality among such children is also much higher. WHO and the UN Children's Fund estimated that water-related deaths account for 4% of all deaths and nearly 6% of all disease for young children.

Even when communities (or countries) make provisions for improving access to drinking water, the source of water and the manner in which water is transported can present problems for children's health. Ground-water arsenic contamination is not common in developed nations, but there are areas (especially in less developed countries) where the potential for contamination is relatively high. High levels of exposure prenatally can result in poor fetal growth, infant mortality, and respiratory illnesses (Rahman et al., 2010). Exposure in early childhood can result in both malignant and nonmalignant lung disease and liver cancer (Vahter, 2008). Ground water can also be contaminated with manganese, which has been shown to increase externalizing problems in school-age children (K. Kahn et al., 2011). A longitudinal study conducted in Bangladesh found the children who drank from wells contaminated with arsenic and manganese for at least 5 years had lower scores on most subscales of the Wechsler Intelligence Scale for Children–IV when they were between 8 and 11 years old (Wasserman et al., 2011).

When water does not come into the house, the storage of water becomes a major issue as regards contamination. Young children may dip their hands into water or drop water scoops on the floor, which then becomes a major source of disease. In Ethiopia, the prevalence of diarrhea among small boys was higher when they dipped water from storage containers (Teklemariam, Getaneh, & Bekele, 2000). In a poor neighborhood of Abidjan, Côte d'Ivoire, *E. Coli* was found in about 1% of source water samples but in 41% of stored water samples (Dunne et al., 2001). Peruvian children living in households where water was stored in containers without faucets had about twice the rate of diarrhea per year as children living in households that had containers with faucets (Yeager, Lanata, Lazo, Verastequi, & Black, 1991).

When water is not piped directly into the house, the distance to potable water becomes a major issue as regards contamination. The distance family members have to travel to get water determines the feasibility of obtaining a sufficient amount of clean water on a daily basis. There is a direct correlation between ease of access and the amount of water used in households (Nandy & Gordon, 2009). The implications for health are considerable. In an urban settlement in Papua New Guinea, the presence of a standpipe within the compound was associated with a 56% reduction in diarrhea morbidity for children under 5 (Bukonya & Nwokolo, 1991). When children are young, the distance to water points, the predictability of water supply, and time spent waiting to obtain clean water can be an especially serious concern given the overall burden most parents have for managing daily affairs (Bartlett, 2005). Hands, food, utensils, floors, cooking surfaces, and children are all less likely to be kept clean when water must be carried any distance. An analysis of data from 74 countries showed that persons under the age of 5 were most likely to live in houses that had no access to clean water (Nandy & Gordon, 2009). As children get older, some of the burden of getting water can be shifted to them, sometimes at a cost of injury, poor musculoskeletal growth, and missing school (Geere, Hunter, & Jagals, 2010).

At present, almost half of the world's households lack a sanitary means for disposing of human waste. The World Health Organization in 2008 estimated that 18% of the world population practices indiscriminate or open defecation, and another 12% uses an unimproved sanitation facility that does not ensure hygienic separation of human excreta from human contact. Not having proper facilities to deal with waste contributes to childhood illness and mortality (Podewils, Mintz, Nataro, & Parashar, 2004). The largest number of cases involve diarrhea, which is caused by a *mélange* of bacterial, viral, and parasitic pathogens connected to poor hygiene and sanitation (Podewils et al., 2004). The higher incidence of intestinal parasites in urban children has been repeatedly associated with shared toilets or a lack of connection to city sewer systems, partly because it increases the likelihood that there will be pools of water containing sewage nearby (Mahfouz, El-Morshedy, Farghaly, & Khalil, 1997).

Problems with contamination from human excreta can result from poor community sanitation facilities as well as poor facilities for managing sanitation within the home. Where sanitation is generally poor within a community, many people resort to defecating in the open or into some

form of bag or container. Excreta can accumulate rapidly in areas frequented by urban children. In these communities drainage facilities can become clogged during rains, causing wastes to be spread in the surrounding area. This leads to an accumulation of pathogens in places where children may play or simply walk on their way to school or other community facilities. In some urban neighborhoods it is nearly impossible for children not to come into contact with the byproducts of these wastes. Although a higher proportion of rural homes function without adequate sanitation facilities, the overall characteristics of rural environments (including less density of households) may decrease rural children's rates of exposure relative to children living in dense urban slums; but the research on these issues is limited.

Children's vulnerability to pathogens from contaminated water and poor sanitation relates to both their exposure level and their level of immunity. Unsanitary conditions can lead to poor growth and other morbidities through disruptions in the immune system. Infants who are breastfed have some protection from early exposure to pathogens. Unfortunately, in the absence of clean water and hygienic conditions, formula-fed infants are highly vulnerable. A study done in India revealed that 53% of milk samples used to feed infants contained significant levels of bacteria. The odds of contamination were 25 times as high when feeding utensils were not properly cleaned (Ray, Nath, & Reddy, 2000).

Not having adequate toilet facilities at home is particularly problematic for young children. Taking young children any distance to defecate is impractical given their limited capacity to withhold bowel movements. Maintenance of shared toilets is a problem, and young children fear using pit latrines. They often use yards, increasing their exposure to pathogens. Some of the diseases can lead to malnutrition because they can decrease food intake as well as interfere with digestion and absorption (Stephenson, 1999). Some have argued that there are broader impacts on cognitive development and social competence stemming from low energy and lack of adequate stimulation (Fernald & Grantham-McGregor, 1998; Gardner, Grantham-McGregor, Himes, & Chang, 1999). In its most recent report pertaining to the Millennium Goals, the United Nations (2012) decried the slow progress on addressing undernutrition in children. They pressed for continued efforts to improve water and sanitation infrastructure in developing countries and to reducing poverty more generally.



### Food Storage/Refrigeration

Another common source of contamination is food. If there are not containers available to allow fresh vegetables and meats to be separated from one another as well as from other household objects, the potential for cross-contamination is high. As well, many pathogens multiply far more quickly at room temperature than when refrigerated or frozen. Thus, having facilities for properly storing and refrigerating food is critical to reducing disease exposure. Demographic and Health Surveys done in developing countries show that fewer than 25% of urban households in Sub-Saharan Africa have a refrigerator (Montgomery & Hewett, 2005). Only about one-third of households in Southeast Asia and one-half of the households in Latin America have refrigerators. Because young children can hold only limited quantities of food in their stomachs at any given time, they often need several small meals a day to obtain the necessary calories and nutrients. However, food-borne illnesses are common for household members of all ages when homes lack adequate facilities for when homes have inadequate facilities for food preparation and storage, it often means food is left out for later consumption, thus increasing the likelihood of contamination (Bartlett, 2005). Although cooking foods often kills bacteria in the short term, studies have shown that microbes quickly multiply when cooked foods are not properly stored. A study done in Bihar, India, where the climate is warm and humid, showed high levels of fungal microbes in cooked food samples collected from homes (Tabassum, Kumar, Sharfuddin, Mohanka, & Komal, 2011). Studies pertaining to food contamination have led to well-developed guidelines pertaining to storage and refrigeration of raw and cooked foods of most varieties as well as to proper sanitation practices related to such storage (U.S. Department of Health & Human Services, 2012). However, many households in developing countries lack such facilities; and the extent to which storage and refrigeration facilities are properly utilized in households having them remains unknown.

### Dampness and Mold

According to the U.S. Environmental Protection Agency (2012, p. 39), "When moisture problems occur and mold growth results, building occupants may begin to report odors and a variety of health problems, such as headaches, breathing difficulties, skin irritation, allergic reactions, and aggravation of asthma symptoms; all of these symptoms

could potentially be associated with mold exposure." Molds can produce toxic substances called mycotoxins that can be especially problematic for those predisposed to allergy and asthma (Norback, Bjornsson, Janson, Palmgren, & Boman, 1999). However, household occupants who are exposed to high levels of molds can develop hypersensitivity pneumonitis even though they may have no predisposing condition; and studies link mold concentrations and the incidence of respiratory problems in household inhabitants of all ages (Stark, Burge, Ryan, Milton, & Gold, 2003; Stevens, 2004). There is evidence that high concentrations of molds may increase respiratory tract infections during infancy (Stark et al, 2003). Children living in homes with high levels of mold are at increased risk of wheezing, persistent cough, and common colds (Koskinen, Husman, Meklin, & Nevalainen, 1999). There is also evidence that living in a house high in mold concentration increases risk for asthma and inflammation in adult residents (Pirhonen, Nevalainen, Husman, & Pekkanen, 1996). Climatic conditions can affect the likelihood of having high mold concentrations. Consequently, there is particular concern for addressing issues pertaining to mold levels in regions of the world that are warm and humid (Li & Hsu, 1997).

Because mold growth accelerates as household humidity increases, controlling moisture levels to the extent possible and disinfecting areas prone to mold can help reduce the likelihood of health problems related to mold, a situation that may be especially important for those with weak immune systems (C. Cook, Cole, Dulaney, & Leese, 1999; Institute of Medicine, 2004; Stevens, 2004). In some respects the scientific literature on household humidity (or dampness) tracks the literature on molds present in residential and commercial places (Verhoeff, van Strien, van Wijnen, & Bruenkreff, 1995). However, the relation between relative household humidity, the presence of molds and other pathogens like dust mites, and respiratory illnesses is anything but simple (Strachan & Sanders, 1989). Accordingly, the Institute of Medicine (IOM; 2004) focused on issues connected with "excessive dampness" in homes and other indoor environments. As they argued, "Indoor environments are complex" (p. 184). It is hard to disentangle exposures to various organisms or encounters with various social and physical stimuli or to eliminate various types of selection biases in analyses pertaining to a given pattern of exposures. The data from many household surveys are quite inexact, making attributions related to specific types of pathogens quite problematic. More focused clinical studies now include biological markers of inflammation, but most

of these markers have yet to be applied in studies of dampness or mold in indoor spaces. Despite such limitations, the IOM report concluded that there was sufficient evidence to support a relation between living in a damp indoor environment (and exposure to mold) and upper respiratory tract infections. They drew the same conclusion with respect to cough and wheeze. There was less convincing evidence as regards shortness of breath, sinusitis, and mucous irritation syndrome. There was also inadequate evidence to support a linkage between indoor dampness and airflow obstruction in persons not otherwise predisposed to asthma or chronic obstructive pulmonary disease. For those with predispositions to asthma, a damp indoor environment increased the symptoms present; however, there was not sufficient evidence that dampness or exposure to mold was responsible for the development of asthma. A similar conclusion was drawn regarding hypersensitivity pneumonitis. A subsequent meta-analysis produced stronger evidence the indoor dampness and mold are associated with a wide range of respiratory and allergic conditions, including the development of asthma and eczema, albeit the authors acknowledged that the studies produced insufficient proof of causal relations (Mendell, Mirer, Cheung, Tong, & Douwes, 2011). At present there are too few methodologically sound studies pertaining to fatigue, mood disorders, or cognitive functioning to draw strong conclusions. Neither is there enough to draw sound conclusions pertaining to rheumatologic or immune diseases.

### Electricity

A major reason that families in developing countries lack adequate refrigeration is that they have limited access to electricity. Most indices of overall housing quality include access to electricity as a component (Chen, 1993; Meng & Hall, 2006; Moughalu, 1991). Many of the household amenities that support health and education require electricity, an obvious new one being access to the Internet and use of computers (Hollingsworth, Mansaray, & Allen, 2011). Estimates suggest that 1.3 billion people lack predictable access (International Energy Agency, 2012), with rural areas in developing countries being the most seriously affected (United Nations Development Programme & the World Health Organization, 2009). One of the major problems not having electricity imposes on health is that families must use some sort of solid biofuel to cook or to provide heat. Such devices often produce smoke that is not properly ventilated. The resultant high level of indoor pollutants contributes to premature death, especially for

children. It contributes to other illnesses and injuries as well, including pneumonia, chronic pulmonary disease, and lung cancer (Bates et al., 2013; Dherani et al., 2008; International Energy Agency, 2012; WHO, 2005). The lack of electricity to support reading, computer use (see Calvert, Chapter 10, his *Handbook*, this volume), television, and the like contribute to poor cognitive performance and school achievement (Fish, Li, Butler, et al., 2008). An analysis of access to electricity in developing countries shows a clear relation to levels of literacy (Kanagawa & Nakata, 2008).

### Ventilation and Cooking Facilities

The annual housing survey done in the United States in 2011 revealed numerous households with incomplete kitchen facilities, heating units without flues, fire places without flues, and no heat source other than a cooking stove (U.S. Department of Housing and Urban Development, 2013). The World Health Organization (2005) estimated that 2.3 billion people in developing countries use biomass fuels or coal for cooking, particularly those living in rural areas with limited access to electricity. Having an open stove with no chimney in the household increases indoor pollutants that can pose health risks. Having open fires in the house or a poorly vented stove increases susceptibility to respiratory illness and burns (Desai, Mehta, & Smith, 2004). In poor nations, acute respiratory illness associated with exposure to indoor air pollution is a leading cause of death among children (Gauderman et al., 2004). Long-term exposure also drives up blood pressure in mothers (McCracken, Smith, Mittleman, Diaz, & Schwartz, 2007).

Having natural or machine-based means of ventilating homes appears to have a positive impact on health for children and adults. The overall pattern of evidence suggests that inadequate ventilation increases the likelihood of asthma, respiratory infections and inflammation. Poor ventilation also increases the number of sick days adults take from their jobs (Sundell et al., 2011). The introduction of outdoor air into the home generally has a facilitative effect on the health of residents, but it is not without potential risks, as some outdoor environments have high concentrations of pollutants. The introduction of outdoor air to help with indoor pollutant can be especially challenging in developing countries where winters are extreme, as cold indoor temperatures can also lead to increased health problems and restrictions on behavior.

One of the great challenges to estimating the contribution of ventilation and cooking facilities to child health and adaptive functioning is that few studies have

simultaneously documented the actual level of exposure to multiple particulates. Most often, household dust samples are gathered to determine exposure levels; but even when dust samples are carefully gathered, accepted methods of assessing certain types of particulates are not available (Breysse, Galke, Lanphear, & Farr, 2002).

### **Color, Lighting, Temperature, and Overall Esthetics**

There is general agreement that everyday esthetics in the human-made and natural environment affects mood and patterns of behavior (Irvin, 2009). Even so, there is surprisingly little research on how esthetic conditions present in home environments affect the behavior of adults or children. There has been greater attention to school environments, but the research on school-like environments provides little in the way of definitive information on how particular features in indoor space affect children's behavior (Evans, 2006). In the broad sense, there is research and theory to support the notion that the sensory affordances of the house should encourage exploration, play, and social interactions, but specific research on particular sensory affordances of households or the impact of arrangements of objects in homes is largely lacking.

#### ***Lighting***

There is growing attention to how lighting within indoor environments affects mood and productivity. The majority of studies have taken place in schools and work environments, with a major focus on how much daylight is present in the key spaces in the environment (i.e., spaces where good visibility is critical for managing essential tasks). One study indicated that children in windowless classrooms showed disturbances in diurnal cortisol rhythms and ability to concentrate (Kuller & Lindsten, 1992). Some have suggested a possible connection between the amount of daylight available in classrooms and academic performance; however, two reviews found limited support for the hypothesis that the lighting conditions present in most schools has marked effect on mood, health, or classroom performance (Boyce, 2005; Higgins, Hall, Wall, Woolner, & McCaughey, 2005).

Studies of indoor lighting show some impact on emotions, memory, perceptual orientation, and problem solving (Knez & Kers, 2000). However, a difficulty with the body of research available is that almost none has been conducted in homes, where variations in the illumination available could often fall outside the ranges reported for commercial

buildings and classrooms. It is likely that most homes have access to sufficient natural light most of the time. However, homes near the North and South Poles would have significant issues pertaining to daylight during their winter seasons. Moreover, there are individual and cultural variations as regards the tendency to open curtains so as to allow outdoor light to penetrate and the use of indoor illumination. The research on seasonal affective disorder in children is limited, but there appears to be an increase in symptoms during winter months, especially among post-pubescent females (Glod & Baisden, 1999). Importantly, the symptoms are most notable among people during early to mid-adulthood, the time period during which adults have the heaviest responsibilities for childcare.

#### ***Color***

There is a fairly substantial literature on how color affects motivation and productivity, most of which has been conducted in commercial or school environments (Stone & English, 1998). Color is part of a haptic environment. There is general belief (with some evidentiary support) that young children respond more positively to warm, bright colors and that their color preferences change somewhat as they mature, moving from bright, medium-cool colors to ones with darker hues. Adolescents respond less favorably than younger children to large displays involving primary colors in favor of more nuanced displays involving blended and more subdued colors (Englebrecht, 2003). Different colors produce different physiological responses; but research suggests that physiological response pertains not just to the color but also to color saturation and brightness (Daggett, Cobble, & Gertel, 2008). These responses are associated with particular mood states and motivational tendencies (Knez, 2001). There is evidence for gender differences with respect to color and brightness, with females having a stronger preference for spaces with a high brightness level (Hidayetoglu, Yildirim, & Akalin, 2011). Although research in the field of color psychology has produced reasonable consistency as regards how color, color saturation, and brightness affect motivation, three things are important to bear in mind when interpreting the findings. First, the majority of studies have not been done with young children. Second, the vast majority of studies have been done in commercial and school settings. Third, almost all the studies involve perceptions of esthetics in unfamiliar surroundings. To what extent the findings hold as regards highly familiar home surroundings is unclear.

### ***Indoor Temperature***

Climatic conditions influence “people” comfort and performance. Children manifest performance decrements when engaged in demanding academic tasks requirements when exposed to high levels of heat at school (Schoer & Shaffran, 1973). More recent studies have focused on the advantages of having air conditioning; however, studies have shown that use of air conditioners may increase the level of pollutants indoors, thus contributing to ill health (Ahman, Lundin, Musabasic, & Soderman, 2000). The evidence pertaining to air-conditioning is inconclusive, as most of the studies have serious methodological shortcomings (Higgins et al., 2005). But there is reasonably good evidence that low inside temperatures can have negative consequences for respiratory health, particularly for young children.

### **Plants: Indoors and in the Nearby Environment**

The practice of having living plants indoors goes back more than 2,000 years, with arguments made for both their esthetic and restorative value. Given that people spend considerably more time indoors now than during any time in human history, the issue of whether having plants indoors promotes well-being for children and adults has taken on increased value. To date, the number of studies on having plants indoors is small, and most have taken place with adults in workplace, hospital, or school-like settings. There is an argument that being around plants indoors gives a sense of relief from daily tasks that has the effect of restoring the capacity for attention (S. Kaplan, 1995). However, studies with adults provide limited support for such a notion (Shibata & Suzuki, 2002). Based on their review of the literature, Bringslimark, Hartig, and Patil (2009, p. 431) expressed “strong reservations about the claims that indoor plants cause beneficial psychological changes.” Particularly unclear are the conditions that might be necessary for exposure to plants indoors to result in positive benefits for children and the mechanisms that might account for such benefits.

Recent interest in the potentially restorative value of having plants indoors derives from the long-held belief about the generally restorative properties of being engaged with nature. There are arguments from evolutionary psychologists that human beings, as a species, have spent hundreds of thousands of years living in natural surroundings and have developed various physiological responses as well as symbolic attachments to various aspects of nature

(Hinds & Sparks, 2011). P. H. Kahn (1999) proposed the biophilia hypothesis; specifically, there is a fundamental human need to affiliate with life and lifelike processes. There is an emerging body of evidence that people have a preference for environments that contain natural features such as lakes and oceans (Ogunseitan, 2005; White et al., 2010). Furthermore, there is a small amount of evidence that positive reactions to natural surroundings may be fairly widespread (Korpela, Hartig, Kaiser, & Fuhrer, 2001), albeit, natural aspects of the environment can also evoke negative responses in some (Staats, Gatersleben, & Hartig, 1997). Recent studies of place attachment and neighborhood satisfaction appear to corroborate the idea that people feel a stronger and more positive connection to their surrounding community when it affords them encounters with vegetation and other natural elements, including opportunities for gardening (Hur, Nasar, & Chun, 2010; Scannell & Gifford, 2010).

There are indications that humans may be genetically predisposed to respond positively to environments that contain “natural” elements such as trees, water, flowers and the like (Hartig, Mang, & Evans, 1991; Hinds & Sparks, 2011; Wells, 2000). For example, research by Abraham, Sommerhalder, and Abel (2010) and Groenewegen, van den Berg, de Vries, and Verheij (2006) indicates that having exposure to the natural environment helps with the restoration of cognitive performance for those stressed by overexertion and it evokes positive emotions. Likewise, R. Kaplan (2001) found that being able to see trees from one’s home, whether in the suburbs or inner city, was associated with a heightened sense of ease and relaxation. Because there is a nascent belief that being close to nature has restorative benefits and can help promote key social and competence goals, there is a general worry that growing up in the inner city could limit productive activity and compromise development for children. However, a study of 64 urban public housing outdoor spaces revealed considerable variability in access to green spaces with more than half having considerable vegetation (Sullivan, Kuo, & DePooter, 2004; Taylor, Wiley, Kuo, & Sullivan, 1998). Of the 262 children observed, most (73%) were involved in meaningful play and most (87%) were being supervised to some degree. That said, involvement of adults was less in the more barren spaces, and the play of children was less creative. Moreover, surveys done with housing project residents indicate that good maintenance of trees and grass in nearby space increased the perception of safety and reduced the level of crime (Kuo & Sullivan, 2001). Natural



landscaping encourages greater use of outdoor areas and attracts a more diverse group to the space (Kuo, Bacaicoa, & Sullivan, 1998). For children residing in poor urban environments, having natural green spaces nearby has a restorative effect. Children who moved to homes with much higher levels of greenness had the highest levels of cognitive functioning after the move (Wells, 2000).

Despite studies showing positive responses to living in or near trees, grass, lakes, streams and other aspects of nature, at present empirical studies provide only limited support for the idea that humans are genetically predisposed to benefit from either indoor or outdoor exposure to nature and only limited support for the benefits of such exposures. The situation is especially unclear as regards the short and long-term benefits of childhood exposures. Part of the problem lays in the relatively small number of high-quality studies done on large samples. Another part derives from the difficulty of separating aspects of the physical surroundings that tend to co-occur; specifically, being nearby to nature generally means living in less dense neighborhoods and in houses that are not as crowded. Living near to lakes and trees also tends to be associated with other social and physical affordances in the geographic area that may promote well-being; and there is a built-in selection bias as regards area of residence—humans are not randomly assigned to geographic areas. Granting the limitations of current studies, the available evidence tilts in the direction that having access to nature in areas nearby to one's home likely increases the opportunities for relaxation and certain types of physical activities that are deemed enjoyable and that may promote certain types of competence, including a kind of self-directedness. That said, there is evidence that some of these “natural benefits” may be producible in areas with limited access to nature if communities take care to assure the availability of even small parks and recreational facilities (Castonguay & Jutras, 2010).

### Indoor and Outdoor Contaminants

Just as there are potential benefits from having access to nature indoors and in the nearby surroundings, so there are potential hazards from exposure to indoor and nearby contaminants. Air pollution is implicated in a diverse array of illnesses in both children and adults, with young children being especially susceptible. Exposure of women to air pollution during pregnancy has been associated with increased rates of child mortality, intrauterine growth retardation, prematurity, low birth weight, and birth defects

(Aguilera et al., 2013; Ebisu & Bell, 2012; Dadvand et al., 2013). Molecular studies have identified DNA adducts (i.e., biological markers of exposure) connected to disruptions in the endocrine system in processes connected to fetal growth (WHO, 2005). Such findings are consistent with those from the GenR study in the Netherlands showing that exposure to airborne particulate matter (PM) during pregnancy leads to less adequate placental growth and function (van den Hooven et al., 2012).

During the early years after birth, air pollution is particularly harmful to the developing respiratory system (WHO, 2005). A birth-cohort study done in Spain showed that prenatal and postnatal exposures to NO<sub>2</sub> and benzene were related to rates of lower respiratory tract illnesses and ear infections during the first 18 months of life (Aguilera et al., 2013). An 8-year study conducted in California showed that exposures to pollutants such as nitrogen dioxide, acid vapor, particulate matter, and elemental carbon was associated with decreased lung function in children from Age 10 to 18 (Gauderman et al., 2004). Even relatively low doses of exposure can damage postnatal lung development. There can be disruptions to normal biologically programmed patterns of growth and branching in the lungs that lead to permanent structural and functional damage. Exposure to nitric oxide and ozone during the early years of life can initiate a cascade of inflammatory and functional responses that injure the airways. Such exposure can interact with dust mite antigen in ways that multiply damage to lung tissue, leading to asthma, rhinitis, and related pulmonary problems. These allergic responses result from polarization of the immune system such that there is a release of Immunoglobulin E rather than Immunoglobulin G or Immunoglobulin M as is normal for the immune system. Exposure to diesel fumes or ragweed pollens (and the like) from the nearby environment can further exacerbate the allergic inflammation leading to sensitization to allergens that otherwise would not cause problems in a child. Critically, these processes can play a role in the way the entire immune system functions to sustain health in children, such as increasing susceptibility to other infectious agents such as rhinoviruses. There are indications that children living in communities with high levels of sulfur dioxide and nitrogen dioxide show a higher prevalence of upper respiratory tract infections as well as broader indicators of acute respiratory infections (e.g., school absence; WHO, 2005). In studies that have made comparisons between areas of high traffic congestion versus low traffic congestion within a community, there tends to be fairly consistent evidence that high exposure is associated with asthma,

hay fever, and atopic eczema (Clark et al., 2010; WHO, 2005). In the review commissioned by WHO (2005), experts concluded that living in areas with high levels of ozone had a negative impact on growth of small airway function, especially during infancy and early childhood. They found less evidence that exposure to nitrogen dioxide and sulfur dioxide had an independent effect on lung development for children, citing complexities attached to atmospheric composition and uncertainties regarding mechanisms of effect. Granting these uncertainties, the World Health Organization's overall appraisal was that "living in areas of high air pollution is associated with lower lung function... (and)... chronically elevated air pollution is associated with lower rates of lung function growth" (2005, p. 124). One study even implicated living in areas with high levels of air pollutants (i.e., nitrogen dioxide) with high traffic congestion may be associated with elevated risk of childhood leukemia (Amigou et al., 2011). Finally, although some attention has been given to estimating how much potentially damaging air pollutants (e.g., atmospheric lead) may contribute to other developmental problems (e.g., lowered cognitive functioning or increased maladaptive behavior), it has been hard to establish a causal connection to such problems thus far (WHO, 2005). Part of the difficulty stems from inability to determine the actual source of contamination because children who most likely to intake harmful pollutants via the lungs are also most likely to intake the same pollutants via ingestion. For similar reasons, it is difficult to isolate the impacts of prenatal and postnatal exposures (Aguilera et al., 2013).

One of the concerns about home ventilation is that air pollutants from outdoors can be dispersed or concentrated indoors depending on the type of ventilation system employed, the fraction of air recirculated, the type of filtration technology used, and the level of humidity present (Sundell et al., 2011). Carbon dioxide is prevalent in the atmosphere in some locales; thus, there is concern that improper ventilation could lead to concentration levels that have adverse consequences for household members.

Historically, much attention has been paid to sources of pollution that emanate from outdoors, some of which penetrate indoors to negatively affect health and development. However, newer studies are showing that pollutants from indoors (e.g., those emitted via dryer vents) may be contributing to outdoor pollution as well (Steinemann, Gallagher, Davis, & MacGregor, 2011). More attention has been paid to the impact of pollutants that remain indoors, including phthalates. Phthalates are mostly used as plasticizers or softeners in polyvinyl chloride (i.e., vinyl). Boas

et al. (2010) found that phthalate concentrations were negatively associated with thyroid function and growth in Danish children. Prenatal exposure to phthalates was also associated with reduced anogenital index (AGI) and reduced height in boys (Swan et al., 2005) and subsequent reduced masculine play behavior (Swan et al., 2010). Studies conducted in Korea show a positive association between phthalate metabolites in children's urine and symptoms of ADHD as well as a negative association with measured intelligence (Cho et al., 2010; Kim et al., 2009). It is not easy to confidently identify the source of phthalates in individual children, as they may come from air, soil, or engagement with various plastic objects, including the mouthing of teething rings and toys.

Exposure to formaldehyde also has been subject to considerable study. Formaldehyde is found in many products associated with housing: particle board, insulation, carpet, and certain types of furniture. A meta-analysis revealed that asthma was more common in children with higher levels of exposure to formaldehyde, a result not surprising because formaldehyde is a known irritant affecting multiple lung tissues and has been associated with a decline in pulmonary function (McGwin, Lienert, & Kennedy, 2010). A study done in France showed that infants exposed to higher levels of formaldehyde, measured by 7-day air samples in their bedrooms, were more likely to manifest lower respiratory tract infections (Roda et al., 2011). Another study, this one conducted in the United Arab Emirates, measured exposure to formaldehyde along with exposure to four other types of indoor pollutants: sulfur dioxide, nitrogen dioxide, hydrogen sulfide, and carbon monoxide (Yeatts et al., 2012). These indoor pollutants were also measured passively for a 7-day period in 628 households. The levels of hydrogen sulfide and sulfur dioxide were associated with wheezing and asthma. Adults in households with higher concentrations of formaldehyde reported greater difficulties concentrating, more dizziness, and more headaches as well. A recent study, done on macaques, showed that inhalation of formaldehyde had impacts even at the molecular level (Rager et al., 2013).

Part of the concern about housing quality in general and living in homes with serious structural defects in particular is that homes in disrepair are far more likely to be infested with dust mites, rats, cockroaches, and other pests that have potential to harm residents (Rao & Phipatanakul, 2011; Rauh, Chew, & Garfinkel, 2002). Infants exposed to indoor wood smoke and cockroaches were also more likely to develop asthma (Salam, Li, Langholz, & Gilliland, 2004). According to a survey done in 2005, about 10% of homes

in the United States have levels of cockroach allergen sufficient to cause such problems (Cohn, Arbes, Jaramillo, Reid, & Zeldin, 2006). Not surprisingly, adults in those households are far more likely to use pesticides to help in the management of pests (Landrigan et al., 1999). A study done in southern California showed that children exposed to pesticides during the first year of life were twice as likely to develop asthma. A systematic review and meta-analysis also showed relations between exposure to pesticides and childhood leukemia (Turner, Wigle, & Krewski, 2010). In addition, exposure to pesticides, both pre- and postnatal, is associated with various cognitive processing difficulties and ADHD (Bouchard, Bellinger, Wright, & Weisskopf, 2010; Eskenazi et al., 2013; Jurewicz & Hanke, 2008). Impacts seem to depend on both the timing and duration of exposure. For children living in agricultural areas, there is increased risk for neurodevelopmental problems (Jurewicz & Hanke, 2008; Rauh et al., 2011).

One of the most widely studied home environmental pollutants is tobacco smoke, with evidence showing that it is implicated in asthma and other respiratory diseases (Biagini et al., 2006; Cook & Strachan, 1999; Rao & Phipatanakul, 2011). The strongest evidence is that prenatal exposure has long-lasting effects (Ruckinger et al., 2010). Exposure to tobacco smoke frequently co-occurs with exposure to other indoor pollutants, with evidence that it has an independent impact on lung function (Kohli et al., 2012; Mullane & Le Souef, 2010). There is mixed evidence regarding relations between maternal smoking and children's cognitive functioning, with somewhat stronger evidence pertaining to prenatal smoking (Julvez et al., 2007; Niemela & Jarvenpaa, 1996). Far more certain is the relation between prenatal maternal smoking and child maladaptive behavior. Evidence of its effects begin in infancy with dysregulation and manifests itself throughout childhood in terms of conduct problems, internalizing and externalizing behaviors, difficulties with impulse control, criminality, and use of substances (Bruin, Gerstein, & Holloway, 2010; Cornelius & Day, 2009). There is evidence that prenatal exposure has effects on developing brain structure and interacts with genes to promote antisocial behavior (Jacobsen et al., 2007; Wakschlag et al., 2010).

The full impact of exposure to airborne particulate matter and other environmental teratogens remains to be determined. However, measurement of long-term exposures to most forms of teratogens indicates that the likelihood of exposure varies by ethnicity, social class, age, and geography (Trasande, Attina, Sathyanarayana, Spanier, & Blustein, 2013). An intensive study of exposure to airborne

particulate matter (PM) in the United States (215 selected census tracts) showed demographic variations in exposure rates for fine particulate matter. Greater levels of exposure were evidenced for children, non-Whites, and those living in poverty (Bell & Ebisu, 2012). Studies of the impact of particular teratogens are especially needed in areas where they are most highly concentrated. For example, children's exposure to polybrominated diphenyl ether flame retardants is especially high in parts of California. A recent study showed that in utero exposure levels of PBDEs were associated with children's attention, motor functioning, and IQ at Ages 5 and 7 (Eskenazi et al., 2013).

According to WHO (2010), lead poisoning accounts for almost 1% of the global burden of disease for children. Depending on housing quality, place of residence, source of water and the kinds of toys and products available in the household, children can be exposed to levels of lead that can have serious consequences for health and development. Ingestion is the most common route of exposure for most children, including ingestion of dust containing lead from handling materials that touch the floor or ground. Inhalation can also be a route of exposure, but is less common than ingestion. In developed countries, lead has been eliminated or drastically reduced in such sources as paint, gasoline, cosmetics, and pipes carrying water; but not even all households in developed countries are free from every source of potential lead poisoning. As it happens, lead comes in a multiplicity of forms and some children live in places near mining sites or incinerators that produce air- or soil-borne lead or they live in areas where water sources remain polluted with lead. In such areas, blood lead levels in children can be high enough to compromise health and adaptive functioning.

The impact of lead on humans has been widely studied with evidence indicating that it affects all organ systems. It has damaging effects on teeth and bones, the kidneys, the cardiovascular and immune systems, and the nervous system, with effects varying by level of lead burden, age, and duration of exposure (White et al., 2007). Research has shown that the brain is particularly sensitive to lead exposure and that lead is able to pass the blood brain barrier (Lidsky & Scheidner, 2003). Lead poisoning results in loss of myelin sheath in children, as well as reducing the number of neurons, decreasing neuronal growth and interfering with neurotransmission (Mycyk, Hryhorczuk, & Amitai, 2005). Relatedly, increased blood lead levels have been correlated with lower IQ, problems in reasoning, attention and short-term memory, lower scores in reading and math, and a greater likelihood of school dropout

(Canfield et al., 2003; Lanphear, Dietrich, & Auinger, 2000). There is also evidence that high levels of lead increase aggressiveness and other forms of externalizing and antisocial behavior (Dietrich, Ris, Succop, Berger, & Bornschein, 2001; Needleman, 2004) and that they are implicated in impulsivity and hyperactivity (Bellinger, 2008; Stein, Schettler, Wallinga, & Valenti, 2002).

One of the challenges in fully delineating how lead exposure is implicated in children's development is that lead exposure is more likely for children living in poverty. This problem has to some extent been addressed in studies where SES has been used as a covariate in the analysis. However, poverty has many cofactors; therefore, it is difficult to fully address the problems of confounding—and many studies have not done so.

Mercury is another well-known neurotoxicant (Trasande, Landrigan, & Schechter, 2005). It exists in three forms: as a metallic element, as an inorganic salt, and as part of organic compounds. Each form has different bioavailability and toxicity. There are natural sources that release elemental mercury into the environment (e.g., volcanoes, emissions from coal-fired electric generation facilities, waste incineration, and some other industrial production activities). Consequently, living near such sources increases the likelihood of contact with elemental mercury. Elemental mercury is readily aerosolized and can, thus, travel great distances to eventually become deposited into soil and water. These deposits become transformed into methyl mercury in microorganisms consumed by fish (Myers et al., 2003). Ingested methylmercury is readily absorbed in the intestines and transported across the blood-brain barrier and the placenta (Kerper, Ballatori, & Clarkson, 1992). When pregnant women consume such contaminated fish in large quantities, it can have severe consequences for the developing brain because brain development is so rapid during the period prior to birth. There is an accumulating body of research showing that high levels of mercury concentration in blood are associated with decreased performance on measures of language, memory, attention, and general intelligence (Grandjean et al., 1997; Trasande et al., 2005). The impact on neurodevelopment depends on the level of mercury present, with some evidence suggesting that low levels may pose less danger of long-term consequences (P. W. Davidson et al., 1998; Trasande et al., 2005). However, mercury poisoning may also pose long-lasting consequences for cardiovascular health as children with higher levels of exposure to methylmercury had greater difficulty maintaining normal heart rate variability (Grandjean, Murata, Budtz-Jorgensen, & Weihe, 2004).

Polychlorinated biphenyls (PCBs) are fat-soluble chemicals that used to be produced in high quantities for industrial use. Their production has been banned in most industrialized nations but they have persisted in soil and sediments and become part of the food chain, especially in beef, dairy products, and fish with high fat content (Stein et al., 2002). Children who live near landfills, incinerators, and hazardous waste sites are at greatest risk. The primary targets of PCBs are the endocrine and nervous systems (U.S. Environmental Protection Agency, 2009). Prenatal and early life exposure to PCBs show impacts early in life, including lower birth weight, decreased head circumference, motor immaturity, poor lability, hyporesponsiveness to visual and auditory stimulation, and deficits in recognition memory (S. W. Jacobson & Jacobson, 2000; Rogan et al., 1986). Lai, Guo, Guo, and Hsu (2001) found impacts on cognitive functioning lasting into adolescence. Granting that prenatal and early postnatal exposures to PCBs increases the likelihood of decreased neuropsychological functioning, the specific impact of particular PCB congeners (dioxins, furans, planars, mono-orthos, di-orthos, etc.) is not well characterized; and there is evidence that some of the effects on prenatal PCB exposures may be mediated through postnatal exposures (Schantz, Widholm, & Rice, 2003).

Studies point to immune system compromises such that children with high levels of exposure have greater difficulty fighting normal infections (Dallaire et al., 2006; U.S. Environmental Protection Agency, 2009); Van den Heuvel et al., 2002; Weisglas-Kuperus et al., 2000). Importantly, there is evidence that prenatal and early postnatal PCB exposure may impact thyroid hormones during infancy (Chevrier, Eskenazi, Bradman, Fenster, & Barr, 2007; Longnecker, Gladen, Patterson, & Rogan, 2000; Winneke, Walkowiak, & Lilienthal, 2002) and menstrual cycles during early adolescence as a consequence of disruptions in the endocrine system (Denham et al., 2005; Yang et al., 2005). Acute high dose exposures to PCBs have also led to skin lesions in both children and adults (Aoki, 2001).

Like exposure to lead and mercury, exposure to PCBs can also have significant consequences for neurocognitive development (U.S. Environmental Protection Agency, 2009). In early childhood, prenatal PCB exposure is associated with a variety of cognitive impairments (reduced memory and attention, decreased verbal ability, impaired information processing) and reduced psychomotor development (Grandjean et al., 2001; J. L. Jacobson & Jacobson, 1996; Stewart, Reihman, Lonky, Darvill, & Pagano, 2003; Walkowiak et al., 2001). In preteen years, prenatal PCB



exposure is associated with decreased reading comprehension, decreased full-scale and verbal IQ, and reduced memory and attention (Patandin et al., 1999; Vreugdenhil, Mulder, Emmen, & Weisglas-Kuperus, 2004). Continued postnatal exposure is also associated with impaired memory and cognitive performance, even among adults (Newman et al., 2006; Schantz et al., 2001). Pre- and postnatal PCB exposure has also shown adverse behavioral and emotional effects in decreased sustained activity, decreased high-level play, increased withdrawn and depressed behavior, increased activity level, increased aggression, and increased emotional reactivity (Lai et al., 2002; Perera et al., 2012; Vreugdenhil, Slijper, Mulder, & Weisglas-Kuperus, 2002). In children, prenatal PCB was also associated with impaired response inhibition and with decreased volume of the splenium of the corpus callosum, a brain structure related to inhibition through Age 9 (Stewart et al., 2005). As with other types of toxicant exposures, exposure to PCBs is often confounded with other physical and social factors that contribute to poor development, but some of the studies identified negative impacts on children's health and development even with careful controls for other environmental factors including levels of stimulation and socioemotional support available in the home environment (Walkowiak et al., 2001). That said, most studies of PCBs, like most studies of heavy metals, have not consistently considered how other aspects of the ecology may serve to moderate the effects of exposure. As an example, Hubbs-Tait, Nation, Krebs, and Bellinger (2005) found that higher SES was protective against lower levels of lead exposure even though it afforded insignificant protection against higher levels of exposure. Moreover, some of the inconsistency in findings may reflect the specific nature of PCBs ingested, with research only beginning to identify effects associated with different types of PCB exposures (Newman et al., 2009).

## Noise

When Evans (2003) composed a cumulative risk index for the purpose of understanding how various aspects of the home environment contribute to allostatic load, noise was one of the factors included in the index. That decision was based on accumulated research indicating that exposure to excessive levels of noise was distracting and contributed to stress and a sense of learned helplessness. Some of the noise children experience at home emanates from within (e.g., loud music or TV), but more often it penetrates into

the interior as a consequence of the home's location near major highways, railways, airports, or industrial sites. Chronic exposure to noises within and outside the home also has a pronounced effect on long-term memory and school achievement (Hygge, Evans, & Bullinger, 2002; Sorqvist, 2010; Stansfeld et al., 2005).

Exposure to noise affects sleep in both children and adults (Ohrstrom, Hadzibajramovic, Holmes, & Svensson, 2006) and contributes to elevated blood pressure and neuroendocrine stress hormones in children and adults as well (Evans, 2003; Evans, Bullinger, & Hygge, 1998; Ising & Ising, 2002; Regecova & Kellcrova, 1995). Chronic exposure to noise is associated with reduced motivation to engage in challenging tasks (Evans, Lercher, Meis, Ising, & Kofler, 2001; Maxwell & Evans, 2000). Consistent relations are also found with hyperactivity (Stansfeld et al., 2005; Stansfeld et al., 2009).

It is hard to determine how much noise contributes to well being in children and adults, given that high noise is associated with poverty; and many of the co-factors of poverty are also implicated in poor motivational tendencies, poor academic performance, more maladaptive behavior, and poor school performance. Indeed, it is not uncommon for homes with high levels of noise to also manifest high levels of disorder. A. Johnson, Martin, Brooks-Gunn, and Pettrill (2008) found that household disorder was strongly correlated with children's reading competence, with noise showing little relation once household order and the quality of the home literacy environment were included in their regression model.

Efforts have been made to reduce the impact of both interior noise and noise that penetrates from outside by using building materials and designs that counter some of their effects. Sound reverberates on hard surfaces, so proper absorptive treatments for walls, floors, and ceilings are crucial to effective communication, a sense of privacy, and relaxation. As yet there are limited studies on how such building properties affect children in areas where ambient noise tends to be higher—most involve studies of school environments.

## Crowding

The negative consequences of crowding have long been of concern (Evans, 2006). As it happens, overcrowding often coincides poor overall housing quality (e.g., poor ventilation, lack of household facilities, poor external construction); for example, Wells and Harris (2007) found high correlations between crowding and structural quality

( $r = .73$ ), hazards present in the home ( $r = .66$ ), and cleanliness ( $r = .74$ ). For that reason, it is not surprising that studies have frequently shown relations between household crowding and poor health among family members (Evans, 2006; Leventhal & Newman, 2010). Crowded conditions have been associated with respiratory illnesses, meningitis, and gastrointestinal problems in children (Baker, Taylor, Henderson & the ALSPAC Study Team, 1998; Galpin, Walker, & Dubiel, 1992; Solari & Mare, 2012; Stanwell-Smith et al., 1994). Crowding encourages the spread of infection and increases the likelihood of injury (M. Baker et al., 2000; Jaine, Baker, & Venugopal, 2011). Crowding may also increase the likelihood of injury and death as a consequence of some life style choices like cosleeping. For example, Blair et al. (1999) made the argument that when poor parents select to sleep with their newborns, it may be a factor in sudden infant death syndrome.

In essence, there is ample evidence that household crowding is implicated in a diverse array of health problems for both children and adults (Office of the Deputy Prime Minister, 2004). However, findings implicating crowding in health problems are inconsistent; and many studies lack adequate controls over confounders and measures of crowding. Importantly, the mechanisms for all observed effects on health have not been fully determined, but stress induction is likely involved in a number of cases.

An exhaustive literature review conducted by the British government concluded that there was some evidence to show how crowding affects health. For example, Evans, Lepore, Shejwal, and Palsane (1998) found that residential crowding was related to higher blood pressure among 10- to 12-year-old males (the same result was not observed for females). Evans and Saegert (2000), in a study of 8- to 10-year-olds, found that children in higher-density apartments had elevated overnight epinephrine and norepinephrine, especially when there was greater family turmoil in the household.

Household crowding also appears to have a negative impact on cognitive processing and educational attainment. The evidence for preschool age children is somewhat mixed, with some studies showing significant effects on measures of cognitive functioning and others not, with no clear pattern emerging from the many samples used and the varied measures employed (Evans, 2006). Relations with academic achievement appear somewhat more consistent (Conley, 2001; Evans, Lepore, et al., 1998; Goux & Maurin, 2005; Solari & Mare, 2012). Part of the relation between crowding and educational performance may pertain to children's perceptions of themselves as

learners, as Evans and Saegert (2000) found a negative relation between household crowding and perceived academic competency. Relatedly, Evans, Lepore, et al. (1998) observed an association between crowding and lower academic attainment likely also relates to reduced motivation for task engagement and a sense of learned helplessness. Part of the relation between household crowding and poor academic performance may devolve from poor parent-child relationships (Evans, 2006). However, it is difficult to fully delineate the mechanisms responsible since crowding is associated with numerous other factors that may give rise to low academic achievement.

In their study using data from LA FANS and the Panel Study of Income Dynamics, Solari and Mare (2012) also found positive relations between household crowding and maladaptive behavior in children. Such findings are consistent with the idea that living in confined space increases the likelihood of stress and of poor treatment by others in the household. For example, parents living in crowded conditions are less responsive to their children and engage in less effective monitoring (Bradley & Caldwell, 1984; Evans, Maxwell, & Hart, 1999; Wachs & Camli, 1991). Evans and Saegert (2000) found that punitive parenting mediated relations between household crowding and psychological stress outcomes in children Age 8 to 10. In general, such findings support the notion that crowding leads to strains in interpersonal relationships that negatively impact mental health for children (Evans, Lepore, et al., 1998). Such findings are consistent with the larger literature on crowding showing that people in general and children in particular show both more social withdrawal and more aggression in high-density environments (Evans, 2006). Studies involving families from quite diverse geographic areas done over the last quarter century demonstrate that living in crowded conditions is associated with physiological stress and adjustment problems in children from early childhood through adolescence (Blackman, Evason, & Melaugh, 1989; Evans & English, 2002; Hunt, 1990). However, the studies conducted by Blackman et al. and Hunt point to the difficulty of clearly attributing children's poor mental health to the fact they live in crowded conditions. Living in crowded conditions is associated with exposure to many other conditions associated with poor mental health as well (noise, dilapidated housing, inadequate resources, family disorganization, family conflict, general chaos), including genetically mediated factors (Evans, Wells, & Moch, 2003). Thus, it remains for future research to isolate how crowding by itself contributes to poor adaptive functioning.

### Summary

There is substantial research on relations between various household conditions (aspects of quality) and children's well-being. Even so, the picture that emerges is far from complete for many household conditions. Most studies have focused on only one or two aspects of housing and have not adequately controlled for other potentially consequential conditions in the residence or the broader family context. In many cases, the observed "significant" findings may well represent the cumulative effects of multiple conditions. Moreover, findings obtained in one study are often not replicated in other studies, and there may well be selection biases operative that account for some of the significant findings that have emerged (Leventhal & Newman, 2010). Part of the challenge facing researchers who wish to more precisely delineate how various housing conditions affect development course pertains to the difficulty of mounting long-term studies of housing that are comprehensive in design. Another part stems from a lack of more integrative theoretical frameworks that could help identify critical mechanisms responsible for particular outcomes at particular points in the life course. There is need for theories that can help specify the interplay among several mechanisms responsible for particular outcomes, consistent with ideas from living systems and bioecological theories of human development.

### MATERIALS AT HAND

Those who are involved in constructing curricula for children have long espoused the value of children's engagement with objects, both natural and man-made (Bronson, 1995; Guyton, 2011). Proponents draw from brain science and cultural anthropology alike (McManus, 2002; F. Wilson, 1998). From objects designed for play and instruction (e.g., puzzles, shape sorters, LEGOs, board games, doll houses, cards, electronic toys, construction sets), to objects used in adult activities (e.g., needles, cloth, beads, paintbrushes, power tools, hammers, bows and arrows, crucifixes), to objects found in nature (e.g., seashells, twigs, dandelions, rocks from river beds, skeletons, animal hides), from nuts that grow on trees to nuts that attach to bolts: Objects are seen as sources of pleasure, healing, and learning for children. There is a vast literature showing that manipulation of objects, using objects in the service of a goal, and involvement with others while engaged with objects

helps to develop a wide diversity of skills (Wolff, Levin, & Longobardi, 1974; Wolfgang, Stannard, & Jones, 2003).

In this section there is a brief review of ideas about children's play and how access to various types of objects evokes different forms of play and purposeful activity. This is followed by a consideration of the processes whereby engagement with objects promotes development in different domains, with attention to how the use of various objects reflects individual and contextual factors (i.e., how objects are part of what the broader context *affords* towards particular developmental goals for particular groups). The remainder of the section is devoted to a consideration of different types of classes of objects (e.g., homemade, natural, toys, tools and household materials, equipment of different sorts, media) and what is known about their relation to children's behavior.

### Play

There are particularly strong advocates of the notion that authentic play, often involving engagement with objects has benefits for both learning and mental health (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009; F. Wilson, 1998). Engagement with objects not only appears to have benefits of its own as regards learning and adaptive behavior, but it often occurs in the context of social interactions that have the potential to engender trust, joy, and scaffolded learning. Brown and Vaughan (2009) argue that such engagements result in new connections between neurons and between disparate brain centers, ultimately helping to sculpt brain organization.

Educators argue that consideration needs to be given to selecting play materials and arranging play areas so that children can derive maximum benefit as regards their engagement with objects and people (Doctoroff, 2001). Considerations include how to make toys and pieces of equipment easily accessible, having variety of materials so as to encourage engagement in various forms of learning and social interactions, having materials that encourage social interaction as well as manipulation, and arranging materials so it is easy for children to identify objects of interest. Research has shown that the affordances of particular kinds of objects are different and, therefore, encourage different types of actions and interactions for children and adults (Rubin, 1977). As an example, preschool children spent more time in outdoor play when they had bigger backyards and more outdoor play equipment (Spurrier, Magarey, Golley, Curnow, & Sawyer, 2008).

## Use of Toys and Equipment

Throughout most of human history adults have fashioned or obtained objects to help them promote the development of children and to simply provide opportunities for recreation. There are archeological accounts (Baxter, 2005; Kemp, 2003) and anthropological analyses (Bishop, 2009; Huizinga, 2008) of objects and their uses, but limited understanding regarding the extent of use or developmental value for most identified objects. Over the past century there has been an upsurge in the production and use of complex materials and apparatus for children, many of which have quite specific purposes. Gibson (1988) contended that objects afford opportunities for exploration and that such exploration leads to changes in perception, action patterns, and cognition. Critically, each type of change leads to adjustments in the other two; thus, perceptions, actions, and cognitions are constantly evolving. Leibham, Alexander, Johnson, Neitzel, and Reis-Henrie (2005) found that access to high levels of materials in the home was associated with sustained interest in particular classes of activities connected to the materials available. New opportunity structures are perceived, new types of actions emerge, and new meanings for the actions and objects are constructed. For example, a study on play with LEGOs in preschoolers showed that advanced levels of play with LEGOs during that period was associated with better performance on mathematics achievement tests in seventh grade, even controlling for IQ (Wolfgang et al., 2003). Play with LEGOs requires that a child build spatially with large numbers of LEGOs and conceive of imaginary structures that represent real objects. That experience appears to initiate cognitive changes that allow better formal operations thinking in the area of mathematics downstream.

There is theoretical (and some empirical) support for the idea that access to toys and other objects promotes both psychomotor and cognitive skills (Tomopoulos et al., 2006; Wachs, 1985). A case in point, play with blocks has long been considered useful in the development of spatial skills (Liedtke, 1995). Likewise, there is research on early language development showing that presenting objects to children contributes to their learning the names of those objects (McDonough, Song, Hirsh-Pasek, Golinkoff, & Lannon, 2011). Objects are high in what language scientists call “imageability,” making it easy for children (or anyone) to connect the name of the object to the visual image of the object. There are stages in the process of learning that

begin with identification of an object’s properties, followed by manipulation or assembly of an object to understand its functions, and then use of the object in the service of some goal or activity (Franchin et al., 2011). Thus, children need access to particular types of objects for a sufficient period of time so that all stages of learning can take place. The process can be difficult for young children, but becomes easier with age.

More research attention has been given to devices aimed at early psychomotor and language development than to devices aimed at other domains of development. A case in point is research on the use of various types of equipment connected to early motor development (e.g., playpens, infant seats, highchairs, swings, jumpers, walkers, saucers, bouncers). There have been controversies and contradictory findings as regards the benefits versus harmful effects of using particular pieces of equipment, including suggestions that some devices may prevent normal patterns of psychomotor development and even encourage counterproductive patterns of locomotor movements (Simpkiss & Raikes, 1972; Talebian et al., 2009). There is even some evidence indicating that high levels of use of baby walkers leads to increased rates of injury (Reidner, Schwartz, & Newman, 1986; Shiva, Ghotbi, & Yavari, 2010; Walker, Breau, McNeill, Rogers, & Sweet, 1996). In some respects the injuries connected to the use of baby walkers points to a broader problem pertaining to the use of objects whose primary purpose is to enhance the experience of children; notably, the use of some objects such as trampolines is connected to increased likelihood of injuries.

Abbott and Bartlett (2001) examined relations between use of several types of equipment and motor development in 8-month-old infants. The pattern of findings that emerged was revealing, granting the relatively small sample used ( $N = 43$ ). Overall time spent with pieces of equipment was negatively related to psychomotor development; however, patterns of relations varied widely across types of equipment. Relations were negative for equipment that was confining (high chair, infant seat, infant swing, jumper), neutral for equipment that allowed some mobility but did not encourage fully normative patterns of movement (playpens, walkers), and positive for equipment that encouraged high levels of movement (saucers).

Greatest attention to the iterative processes connecting engagement with objects and learning has been focused on young children; but there is no theoretical reason for believing that they are less applicable to later age periods. A longitudinal study involving measurement of learning



stimulation in the home when children were in kindergarten showed relations to executive functioning when children were 6 to 8 years old (Mezzacappa, Buckner, & Earls, 2011). Likewise, Sansour et al. (2011) found that access to learning materials and experiences were related to working memory and expressive language skills among school-age children. A longitudinal study that followed children from Age 8 to Age 13 showed that a cognitively stimulating home environment was associated with increasing academic achievement motivation (Gottfried, Fleming, & Gottfried, 1998).

There are social class differences (see Duncan, Magnusson, & Votruba-Drzal, Chapter 14, this *Handbook*, this volume) in maternal conceptions regarding how young children should use toys (Bernstein & Young, 1967). Lower-SES mothers, more so than higher-SES mothers, felt that the purpose of toys was to keep children entertained. By contrast, higher-SES mothers, compared to lower-SES mothers, felt that toys were important in preparing children for school and to let them know that the mother cared about them when she was not with them. There are also cultural (see Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume) and historical (see Stearns, Chapter 20, this *Handbook*, this volume) differences in values and mores pertaining to the use of materials (Gauvin, 2001). Over the past century, as technology has increasingly pervaded all aspects of life and as the nature of employment has shifted, the emphasis on using various means to stimulate children's learning has increased (Bradley, 2009). Engagement with objects (toys and tools included) in the company of more competent others enables children to develop increasingly complex action plans as regards their own behavior. Joint activity is often the venue for these encounters, but the sequence of individually guided and socially guided actions with objects varies and helps to determine a child's pattern of intellectual, psychomotor, and social growth (Gauvin, 2001). There is considerable variation both within and across socioeconomic and cultural groups as regards how often children are exposed to particular types of objects and materials (Bradley, Corwyn, McAdoo, & Coll, 2001). In Latin America and the Caribbean, parents tend to put less emphasis on stimulation and teaching of academic skills, especially early in life, partly because they believe that children attain developmental milestones at a slower pace (Durbrow, Pena, Masten, Sesma, & Williamson, 2001; Pachter & Dworkin, 1997). Cultural models of parenting in Arab countries place less emphasis on stimulation of school achievement than do Western democracies and

Asian countries like Taiwan, South Korea, and Japan. Accordingly, a study done in Bahrain indicated that children there had generally lower numbers of stimulating toys in the house (Hadeed & Sylva, 1999). However, it is important to maintain a broad ecological perspective as regards such findings given that houses in Bahrain tend to be somewhat smaller, thus making accumulation of materials less feasible.

As the diversity of objects in a home increases, so do encounters between household members involving those objects. Notably, as the number of books in a home grows larger, so too does the number of times parents tend to read to children (Tomopolous et al., 2006). Such social interactions between parents and children involving toys and objects have been found to predict children's development (Roggman, Boyce, Cook, Christiansen, & Jones, 2006).

Although there is a substantial literature linking access to learning materials and toy play with achievement and cognitive development, such observed relations may not reflect a simple causal connection between the two (Bradley et al., 1989; Senechal & LeFevre, 2002). More specifically, what a child has access to and that child's developmental course reflect the child's characteristics and the behavior of those in the child's social network (parents, teachers, siblings, playmates, etc.) and the broader affordances of the child's context. As living systems theory would suggest, there are confounds between the physical and social affordances present in a person's life and the characteristics of the person; thus, simple causal attributions about one subset of affordances (e.g., the toys and materials present) and developmental course must be viewed with some skepticism (Farah et al., 2008; J. E. Miller & Davis, 1997). For example, having more stimulating objects in the home was associated with higher levels of achievement, social skills, or cognitive development in several studies; but in the same studies so was having a more involved parent; moreover having a more involved parent was associated with having more stimulating objects (Bradley & Caldwell, 1984; Tesh & Holditch-Davis, 1997). A similar pattern emerged between having more stimulating materials at home and having more enriching out-of-home experiences; namely, each was associated with higher achievement and each was associated with the other (Bradley & Caldwell, 1984; Sansour et al., 2011). In effect, it can be difficult to disentangle relations between engagement with objects and other affordances connected to one's life as they influence developmental course. The complexity of these relations is all the more evident when one considers that the strength of relations between access to enriching materials and

outcomes such as achievement and self efficacy varies by race and ethnicity (Bradley et al., 2000).

Finally, Sirin (2005) found that the average correlation between family SES and achievement was substantially lower than the average correlation between educational resources in the home and achievement. Thus, there is reason to believe that it is engagement with diverse types of materials that is instrumental in promoting a variety of adaptive skills and propensities. This general proposition accepted, it is also clear that children with equal access to materials at home do not necessarily enjoy the same access to other social experiences that help convert such “capital” into adaptive development, most notably interested and informed parents (Sansour et al., 2011). As Lareau and Horvat (1999) posited, there is a difference between possession and activation of family capital, the former necessary but not sufficient for the latter. In effect, what a child derives from access to a particular subset of environmental affordances depends on the broader set of environmental affordances present (physical and social) and what the child brings by way of competencies and proclivities when engaging that subset.

As children age, parents tend to provide different types of toys and materials for them to play with and learn from. Interesting in this regard is research showing that gender preferences for certain types of toys emerge by the second year of life (Jadva, Hines, & Golombok, 2010). Important too is understanding that affordances provided by various classes of toys and other objects typically used by children may affect their development in particular domains. Studies show that during early childhood boys and girls tend to select toys that clearly promote gender identity and various forms of social action connected to gender (e.g., dolls, cuddly toys, princess books, power rangers, transformers, toy airplanes, train sets). However, in the case of girls, toy selections also lead to the promotion of esthetic sensibilities; whereas toys favored by boys tend to promote psychomotor, technical, and construction skills (Francis, 2010). Research shows that the gender stereotypes in toy preferences that emerge in early childhood tend to persist (Cherney & London, 2006). Boys tend to select toys requiring active manipulation and the use of spatial abilities, whereas girls tend to select toys that involve the use of communicative and social skills (Subrahmanyam & Greenfield, 1994). These gender differences also apply to computer games (see Calvert, Chapter 10, this *Handbook*, this volume), with boys much more likely to play games that contain violence (Cherney & London, 2006). Boys’ higher level of use of video games may reflect the fact that

fewer games are produced that have content interesting to girls, a factor that may be changing as more games and websites are developed. Ethnic-based reasoning about toy preferences emerges by Age 6 or 7 as well (Lam & Leman, 2003), but there is little research on the degree to which such differences may lead to consequential variations in cognitive, psychomotor, or social skills.

### **Homemade Toys and the Use of Natural Materials**

Most research on relations between access to materials and competence in children focuses on books and purchased play materials. Less attention is paid to objects from the natural environment and various tools and materials used as part of everyday family activities. In this section attention is given to materials not expressly purchased for children’s pleasure or development, with a view to how they may help determine the well being of children.

#### ***Using Tools Connected to Home Life and Parental Work***

It obvious that children use household objects for recreational, instrumental, and symbolic purposes, but the way in which they use such objects and the developmental consequences of such uses have rarely been studied. There have long been discussions on the potential value of using objects such as mirrors to teach children about self-identity and body parts; as well discussions on the use of cups, bowls, and laundry baskets for ideas and techniques regarding nesting and stacking (Bronson, 1995). There is high likelihood that utensils designed for cooking will be used toward cooking-related knowledge for children. Pots, pans, stoves, knives, and other cooking utensils and appliances are likely to be used for other purposes as well, purposes that likely would have an impact on the development of psychomotor and cognitive skills. That said, research has yet to delineate the nature of such impacts. The use of household objects by children resurrects ideas from theoretical concepts connected with environmental affordances (Gibson, 1982); specifically, that the functional utility of an object depends on how tightly it is connected to an individual’s interests and competence. Some objects are more open-ended with respect to the kinds of uses they induce, whereas others are more closed-ended. Some toys (likewise some tools) are designed to serve a rather narrow purpose (e.g., a sewing needle)—quite often a solitary purpose. There is not much about them that encourages broad applicability, imaginative play or social engagement. By contrast, some toys and tools lend themselves to transformative actions and collaborative activities, like

construction toys, toys that combine physical and virtual components (Petersson & Brooks, 2006).

Gauvin (2001) argued that children come to understand how particular objects can be used as a consequence of observing how others use them and by engaging in joint activities. Through time such interactions help determine the meaning and significance of the object for a child and aids a child in planning how to use the object. In effect, a child's cognitive development reflects the nested structure of everyday actions involving household objects.

Wachs (1985) argued that there is no simple relation between engagement with objects and patterns of development. He invoked the notion of "specificity" as regards functional relations between engagement with particular objects and development of particular competencies or proclivities. He contended that engagement with a particular object may promote development in one domain but not others and with some children and not others. The more open-ended the object, the more likely its effects will be multiple and wide ranging, partly owing to the greater likelihood it will engage children's intrinsic motivations and promote feed-forward loops among areas of competence (Cunha & Heckman, 2007).

Finally, although most research on household objects and family tools focuses on the advantages they bring to children, not all objects necessarily bring such advantages. Narang et al. (2010) reviewed a growing literature on the costs to children of having guns in the home. Data from the Centers for Disease Control and Protection (CDC) indicated that 5,285 American children were killed by guns in 2005 (CDC, 2006). With adolescents, guns are a primary means of suicide (M. Miller & Hemenway, 2008).

### *Using Materials From Nature*

Children use objects found in nature for recreation and learning (rocks, sticks, sand, leaves, seashells, nuts, bark). As children in highly technological societies have moved to using human-made toys, Louv (2005) voiced worries that the types of experiences afforded by "natural" objects are being lost. In some respects this worry connects to ideas pertaining to the value of authentic play (Hirsh-Pasek & Golinkoff, 2003) and to the restorative qualities of nature (Wells, 2000). To date there has been little research that investigates the advantages of play with natural objects, albeit there is some regarding the link between play outdoors and adaptive functioning (Hinds & Sparks, 2011). As one might expect, there is some evidence that being in natural surroundings and engaging natural objects increase certain facets of sensory awareness (Louv, 2005).

More generally, it would seem that the affordances of most natural materials lend themselves to rather open-ended play and utilization, contrasted to many man-made objects that are designed to afford more prescribed functions.

The idea that materials found in nature may have different affordances than materials produced commercially has an analog in the idea that affordances found in nature tend to be different from the affordances in built environments. Fjortoft (2001) looked at how play in different natural environments (landscapes) induced different types of play behavior and how more play in natural landscapes improved psychomotor skills. The experimental children were taken to five chosen natural habitats for 1 to 2 hours a day as part of kindergarten. The comparison group had access to kindergarten playgrounds with recreational equipment. Observations made in the five different habitats showed that each had affordances that encouraged distinct types of play and physical activities. By the end of the year, children randomly assigned to the natural environments group showed better performance in two areas of psychomotor development directly related to the differential experience in the natural versus human-made habitats. In their study of inner-city children, Taylor et al. (1998) found that, when families lived near areas with high levels of vegetation, children engaged in more overall play and that their play was more creative.

### **Equipment, Devices, Spaces, and Physical Activity**

Because modern lifestyles have led to higher levels of sedentary behavior (Matthews et al., 2008; Nader, Bradley, Houts, McRitchie, & O'Brien, 2008; Strong et al., 2005), with concomitant increases in obesity and associated health problems (Ekelund et al., 2007; Koplan, Liverman, & Kraak, 2005), there has been an acceleration of interest in factors that may increase physical activity in children. Experimental and observational studies, mostly done in school or park environments have shown that having access to playground equipment and apparatus markedly increases the amount of moderate to vigorous physical activity children engage in (Ridgers, Fairclough, & Stratton, 2010; Rosenberg et al., 2010; Spurrier et al., 2008). For young boys, access to parks in the neighborhood also increased the amount of physical activity (Roemich, Epstein, Raja, & Lin, 2007).

In contrast to having playground equipment, having electronic equipment (see Calvert, Chapter 10, this *Handbook*, this volume) in the home, especially in a child's bedroom, decreased the level of physical activity

(Rosenberg et al., 2010). Analysis of data from the Children Living in Active Neighborhoods study showed that having more materials to support sedentary behavior in the home was related to body mass index and the amount of moderate to vigorous physical activity during adolescence, with some gender differences identified (Crawford et al., 2010). A separate study involving 294 adolescents found that having access to equipment for physical activity was connected to the amount of moderate to vigorous physical activity for boys but not girls (Patnode et al., 2010). Another study of 358 adolescents found that the density of physical activity equipment in the home was negatively associated with low-density lipoprotein, total cholesterol, insulin resistance, and percent body fat, whereas the density of media present in the home was positively associated with the same biomarkers (Dengel et al., 2010). Such findings are consistent with research showing that watching TV is associated with obesity and intervention studies showing that reducing time spent watching TV and on the computer lead to reduced BMI in children (Epstein et al., 2008; Robinson, 1999). However, Gattshall, Shoup, Marshall, Crane, and Estabrooks (2008) found that having more equipment in the home to support physical activity does not always guarantee children will engage in more active play. In that sense, access to equipment may function much like having access to nutritious foods, which does not induce appropriate food consumption by itself.

In addition to what toys and objects themselves directly afford children by way of opportunities for motivation and learning, their availability increases the likelihood of social interactions between children and other household members (Tomopolous et al., 2006). There are also studies showing that having access to playground equipment is related to increased levels of social interaction among peers; but with findings suggesting that pathways of influence between physical-environmental and social affordances may operate in both directions (Giles-Corti & Donovan, 2002; Hume, Salmon, & Ball, 2005). Having such resources available at home or the nearby environment increases the probability of social exchanges that promote psychomotor, language, cognitive, and social development and that could lead to self-productivity in learning (Cunha & Heckman, 2007). They could lead to a stronger sense of agency, self-directedness, and learning motivation (Ryan & Deci, 2000). That said, there is uncertainty as regards the pathways and moderators of these relations; and the cross-sectional design of most studies leaves ambiguous the primary direction of effect as regards how availability

of materials and spaces for physical activity may encourage active social exchanges.

One of the more intriguing findings from the study by Hume et al. (2005) was how strongly children's perceptions of the physical and social affordances of their homes influenced actual levels of activities (see Vandell, Larson, Mahoney, & Watts, Chapter 8, this *Handbook*, this volume). This finding may connect to the broader literature on socioeconomic differences in family environments. Specifically, chronic poverty and other risk factors (e.g., poor quality housing) can lead to stress and depression in household members, which then leads to higher levels of negative and lower levels of positive interactions between them (Bradley & Corwyn, 2003). This latter circumstance could easily contribute to negative perceptions of home life and lower levels of productive activity in children. Another finding emerged in a study by Spurrier et al. (2008). Specifically, they found that the level of play among young children not only reflected the amount of playground equipment available at home but the size of their backyard. So, as theory would predict, it not just what is in a space that matters, but the amount of space as well.

### **Books and the Home Literacy and Numeracy Environment**

A survey done in 43 countries showed that number of books in the home was positively correlated to reading comprehension in 15-year-olds (Chiu & McBride-Chang, 2006). Not surprisingly, measures that attempt to capture the home literacy and numeracy environments also tend to include items pertaining to activities with materials such as books, painting and drawing supplies, games and writing implements, playing cards, board games, calendars, calculators, and the like. Such activities are associated with achievement and linguistic competence (LeFevre et al., 2009; Melhuish et al., 2008). Moreover, parents' engaging in these activities with their children connects to children's interest in books and learning materials (Farver, Xu, Eppe, & Lonigan, 2006).

Griffin and Morrison (1997) found that the home literacy environment predicted language-based skills but not number-based skills in both kindergarteners and second graders, controlling for child IQ and maternal education. Likewise, A. Johnson et al. (2008) found that access to books was related to child vocabulary attainment, controlling for household chaos and maternal reading ability. A. Johnson et al. (2008) also found that the number of books available to a child was associated with the child's



vocabulary skills but that the time children spent amusing themselves with books was related to strength of vocabulary and to phonological awareness. These distinct patterns of relations suggest that somewhat different patterns of exposures undergird the development of vocabulary and reading comprehension. Further support for such a notion derives from a study by Melhuish et al. (2008). Specifically, a group of items documenting general routines and social encounters within the family did not predict academic achievement, whereas a group of items documenting activities that provided clear learning opportunities did. Further support for the idea of specificity of environmental action comes from the study by Farver et al. (2006). Specifically, emerging reading skills in children was significantly correlated with the parent's specific involvement in literacy activities with their children, not the parent's own literacy habits. Moreover, the parent's literacy habits were only moderately correlated with the degree to which they spent time engaged in literacy activities with their children ( $r = .42$ ).

LeFevre et al. (2010) presented a model for the development of mathematics competence that includes the development of linguistic skills, quantitative skills, and spatial attention. There is evidence that the first of these pathways, linguistic skills, is supported via access to reading materials and activities involving language; but the third, spatial attention, would likely be supported by having materials requiring the use of spatial skills—although the details regarding this possibility have yet to be examined. Dearing et al. (2012) found that the general level of investments for learning available in the home (including materials and enriching activities) were related to arithmetic and spatial performance for first-grade girls; however, the direct involvement of parents in helping children learn math was also a factor in math performance. Research indicates that achievement in both math and science is associated with the child's perception of how much math or science is actively encouraged and supported in the home (Fraser & Kahle, 2007).

### Support for Development in Targeted Areas of Competence

There is a growing literature on the conditions needed to support children's competence in areas such as science, art, music, and athletics (Elliot & Dweck, 2005). Although each area requires that children engage with relevant objects and materials to gain expertise, most research focuses on the kinds of organizational structure

and social encounters children need rather than on objects and materials per se (McPherson, 2009). J. Davidson, Howe, Moore, and Sloboda (1996) found that children's achievement in music was related to having an instrument at home, plus parental involvement in music lessons and practice. Phillips (2003) found that involvement in instrumental music programs depended on the home musical environment, which included access to musical instruments as well as parental investments in music lessons. A similar pattern of findings emerged in study of science proficiency in 15-year-olds. In effect, it was the opportunities to learn available at home, including access to materials connected with science (books, computers, other devices) and parental support that showed strong relations with performance in science (Liu & Whitford, 2011). In overview, the very limited research done on home supports for competence development and activity participation in areas such as music and science indicate that children from homes richer in educational supports (including materials directly connected to performance) tend to more frequently engage in relevant activities and perform better. However, the total canon of research in this area is very limited.

### The Multimedia Universe

The vast majority of American children—and increasingly children worldwide—have access to multiple forms of media (see Calvert, Chapter 10, this *Handbook*, this volume). There are those who applaud this revolution in access, believing it affords new opportunities for learning, recreation, and social networking. Likewise, there are those who voice concerns that children will be exploited and misdirected (Brooks-Gunn & Donahue, 2008). There are age variations in how much time is spent engaged with media, but the amount of time is growing, particularly among young children (Rideout, Hamel, & Kaiser Family Foundation, 2006). Best estimates are that on a typical day more than 80% of children under 6 use some type of screen media and they spend about 2 hours doing so. In about one third of homes, the TV is on most of the time. About half of preschool-age children have some type of console video game player available to them in the home. The majority of American homes have two or more TVs, with many children having TVs in their own rooms. Nearly 9 out of every 10 school-age children in the United States have access to a computer at home, and 3 out of 4 have Internet access. More than half of U.S. children have their own hand-held video games and about the same number now have personal cell phones. Takeuchi (2011) reported that

more than half of U.S. American children routinely use some type of hand-held gaming device and over two thirds play with TV-based video game consoles. These increasing numbers notwithstanding, there is still an economic digital divide as regards access. Part of what the digital divide represents is *how* children are spending time with media (including time with multiple media simultaneously) more so than *how much* time they spend exposed to media per se (Warschauer & Matuchniak, 2010). That said, high accessibility of media to children in their homes (especially in their own rooms) and a lenient attitude of parents toward media use converts to more average hours of access to media in the household (Roberts, Foehr, & Rideout, 2005). A key factor in determining how much media exposure children get is the amount of time their parents spend watching TV, using the computer for recreational purposes, and the like (Roberts et al., 2005). Finally, the patterns of media use documented for children in the United States are not unique to America. Studies done in other developed countries reveal similar patterns (Hardy et al., 2006).

Most of the time preschool-age children spend watching TV, using computers, and playing video games, they do it independent of their parents (Takeuchi, 2011). Even when parents are present, it does not mean that they are carefully monitoring the content (Rideout et al., 2006). Parents voice concerns about children's use of TV and other media, complaining that it reduces the amount of exercise children get and may pose dangers from predators (Takeuchi, 2011). However, the majority also state that their children more often imitate positive than negative behaviors observed on TV. That said, most parents of preschoolers voice that their children seem highly attentive and responsive to commercials seen on TV. Research appears to attest to this latter worry (Calvert, 2008).

A real challenge in understanding the influence of media on children's development is that there is so much diversity in media used by individual children as well as a constantly changing media landscape (Rideout et al., 2006). Additional challenges derive from the fact that children of different ages use media in somewhat different ways and respond to aspects of media differently. In their review, Kirkorian, Wartella, and Anderson (2008) made note of fact that young children do not readily learn from media due to their need to interact with real people to grow cognitively and linguistically. This problem has been dubbed "video deficit."

As children age, different aspects of media become more perceptually salient and cognitively engaging, with some evidence that certain types of early exposures may

lead to downstream problems with attention (Zimmerman & Christakis, 2007). During early childhood, children are able to benefit from educational media productions and access to computers at home, with low-income children appearing to derive particular benefit (Fish, Li, McCarrick, et al., 2008). That said, there is evidence that more than 2 hours of daily exposure to media may result in lower achievement (Rideout et al., 2006). As Schmidt and Vandewater (2008) noted, the "effects" of media consumption depend on whether the content is educational or entertainment in focus. During middle childhood and adolescence children can take advantage of video games, instructional productions on the Internet, and educational content on TV to assist learning in all areas. As yet there is no compelling evidence that exposure to such programming is generally better than exposure to more traditional forms of learning; however, it may afford some children access to content that would otherwise be very hard to obtain. Part of the inconsistency in patterns of results obtained thus far appears to reflect differences in the nature of the learning experience via media students are exposed to (Warschauer & Matuchniak, 2010). Critically, web-based instruction is a rapidly evolving component of the total media landscape for children—a type of mesosystem phenomenon with little available research to indicate precisely what it means for children's development.

In some respects video games, personal digital assistants (PDAs), and websites present experiences with different affordances than TV, radio, and more traditional media; that is, they are interactive. They have features that resemble play and, thus, have potential to assist children's development in ways similar to well-designed play experiences (Bavelier, Green, & Dye, 2010; Lieberman, Fisk, & Biely, 2009). Research indicates that computer-based games can facilitate certain cognitive skills (De Lisi & Wolford, 2002) and achievement (Clements, 2002). As games and activities on media devices have become more like those available in natural and educational settings, recommendations and standards pertaining to quality are emerging to help guide in the production of games that afford children positive learning and recreational experiences.

Perhaps the greatest concern voiced about media pertains to how involvement with various forms of media influences children's social, emotional, and physical well-being. Having more electronic games at home is associated with lower levels of physical activity and higher body mass index (BMI), especially for boys (Escobar-Chaves & Anderson, 2008; Fakhouri, Hughes, Brody, Kit, & Ogden, 2013; Timperio et al., 2008). McHale, Dotterer, and Kim

(2009) highlighted the point that children's engagement with media plays an important role in identity development, social networking, and connecting children to social institutions. There are worries that media technology has increased risky and self-injurious behavior in some youth and made others more susceptible to bullying and predation (Brooks-Gunn & Donahue, 2008). For certain, media have become an integral means of communications between children and their peers and among family members (Subrahmanyam & Greenfield, 2008). Although teens state that use of communications media has improved their social relationships, the evidence is equivocal, and there are indications that some children may be less interested in face-to-face communication as a result (Subrahmanyam & Greenfield, 2008). What seems clearer is that feedback received from network friends affects adolescents' self-esteem (Valkenburg, Peter, & Schouten, 2006) and it has opened up additional avenues for bullying and exploitation (Wolak, Mitchell, & Finkelhor, 2006). Media violence is a risk factor for aggression, and advertisements on popular media increase smoking and drinking (Escobar-Chaves & Anderson, 2008; Huesmann, Moise-Titus, Podolski, & Eron, 2003; Paik & Comstock, 1994; Wallenius & Punamäki, 2008). Media can contribute to children's fears and anxieties as well as increase empathy (Weiss & Wilson, 1996; B. Wilson, 2008). Cross-sectional and longitudinal evidence links watching violence on television to social as well as physical aggression into adulthood (Coyne, Archer, & Eslea, 2004).

Although some of the mechanisms responsible for observed relations between viewing violence and subsequent manifestation of antisocial behavior would seem operative for prosocial behavior as well, there are fewer long-term studies of such relations. There is evidence for short-term impacts, and a meta-analysis conducted by Mares and Woodard (2005) indicated an overall effect of .27 between viewing prosocial content on the media and prosocial behavior in children. These broad associations notwithstanding, part of what determines impact on children is correlated actions on the part of parents (Nathanson & Cantor, 2000). Although parents report having rules about the use of most forms of media (Takeuchi, 2011), research has shown that, even when parents agree that use of social media represents a significant threat, they do not tend to engage in extensive monitoring (Rosen, Cheever, & Carrier, 2008). The precise implications of the low levels of monitoring are not fully clear, but research on use of monitored versus unmonitored chat rooms clearly indicates that children's experiences in unmonitored chat

rooms are more negative (Tynes, Reynolds, & Greenfield, 2004). Moreover, there is a general concern that extensive use of social media may have negative consequences for parent-child relationships, especially for older children (Subrahmanyam & Greenfield, 2008). Although the findings would seem to confirm broadly held suspicions that the use of social network sites is particularly bad for family relationships, interpreting the findings is not straightforward as there are selection biases as regards how adolescents use the Internet and computers more broadly.

There is very little information on exposure to multiple forms of media during the day or over longer time spans (Wartella, Huston, Rideout, & Robb, 2009). Southwell and Doyle (2004) highlighted the importance of better understanding individual motivations for using particular media and better understanding how the affordances of various media versus the affordances of potential alternative activities may play into individual choice. Vandewater and Lee (2009) suggested the use of multiple measurement strategies, including time diaries, monitoring systems, and experience sampling methods. Research on the effects of particular types of media exposure is challenged by confounds that exist between the overall amount of exposure to media children get and the content present in those exposures. It is also challenged by confounds that exist between amount of exposure and other factors present in a child's social context, including parental and peer mediation of various types of exposures (Oakes, 2009). As the engagement model of person-environment interaction (Neufeld et al., 2006) would suggest, there is considerable interplay among the physical and social elements present in one's life, and considerable renegotiation of how to achieve good fit towards different ends.

Electronic media have become deeply insinuated in the fabric of modern home life. They often guide the arrangement of objects and materials within the residence and influence the arrangement of space. G. Johnson (2010) argued for the inclusion of the techno-subsystem into Bronfenbrenner's ecological developmental model. In support of the idea, he compared the amount of variance in language and cognitive development accounted for by Internet use and family SES and found that the former accounts for a greater proportion of variance than the latter. Interesting as the comparison is, it is a bit misleading in that indices of other recreational and learning materials present in the home also account for more variance in child achievement than SES as well. Nonetheless, the idea that electronic media function as a meaningful subsystem of the home physical environment would appear to have merit.

## Summary

Throughout history humans have sought and fashioned objects to increase the chances of survival and productivity, and to enhance overall well-being. As life has become more varied and complex, the construction and use of objects has become ever more deeply insinuated in human experience. There is a substantial literature on how people use objects and how objects are implicated in various behavior patterns and developmental domains. There remains little doubt that having access to various types of material enables children to develop specific forms of competence; but research is clearer about the instrumentality of objects for early development of competence and simple forms of behavior (e.g., the play of toddlers) than it is for higher levels of competence and more intricate forms of behavior. It is often difficult to pinpoint just how engagement with a particular object functions to support a particular pattern of behavior or the enactment of a particular set of competencies. That is not surprising given that behavior patterns tend to be multiply determined, that is, reflective of many experiences over time and the affordances of particular settings. It is also not surprising that we know less about the “influences” of new object forms (e.g., electronic media). What seems clear is that simply having more objects at one’s disposal is not all that matters, as they afford opportunities for harm as well as enhancement and they can direct as well as facilitate paths of development.

## HOUSEHOLD CHAOS

Evans, Gonnella, Marcynyszyn, Gentile, and Salpekar (2005) found that high levels of environmental chaos at home were related to poorer self-regulation, greater stress, and higher learned helplessness during middle childhood. Their findings are consistent with an expanding repertoire of studies showing associations between household chaos and poor children’s social, emotional, and cognitive functioning (Vernon-Feagans et al., 2012). The relation between household chaos and less optimal child functioning seems to occur because chaos produces stress in children and because it degrades the care provided children. For example, Dumas et al. (2005) found that chaos directly contributed to poorer attention focusing and ability to accurately respond to social cues in young children.

The indirect path between household disorder and lower competence and adaptive behavior in children via poorer

quality parenting has received considerable research support (Dumas et al. 2005; A. Johnson et al., 2008). Coldwell, Pike, and Dunn (2006) found that behavior problems in children who lived in more chaotic homes were more pronounced, partly due to increased negative behavior on the part of both parents and decreased positive behavior on the part of fathers. Deater-Deckard et al. (2009) also observed that household chaos was correlated with poor housing conditions and a lower quality literacy environment. It was also correlated with lower child IQ and more conduct problems, even accounting for other limitations in the home environment.

The pathway to poor development through parenting seems especially likely in many households characterized by disorder in that maternal depression is also common in such households (Calam, Jones, Sanders, Dempsey, & Sadhnani, 2012). In similar manner, chaos is also more common in households when parents have addiction disorders, and there are established links between multiple forms of addiction and poor parenting (Haugland, 2005). With these general patterns in relations between home chaos and poor child functioning accepted, the “effects” do not seem the same in all families. In the study by A. Johnson et al. (2008), household disorder was more influential in situations where mothers had greater reading skills themselves; in effect, it seems to disrupt the generally productive involvement of otherwise competent mothers. This likelihood also manifests itself in the findings by Vernon-Feagans et al. (2012) in that household chaos had a stronger impact in terms of reducing positive aspects of parenting than increasing negative ones. It is important to acknowledge that the association between household chaos and maladaptive behavior in children may be partly genetic (Jaffee, Hanscombe, Haworth, Davis, & Plomin, 2012). It also appears to be the case that there can be interplay between the amount of order at home and in the neighborhood as regards when adolescents will engage in some risky behaviors (Roche & Leventhal, 2000).

There is not an agreed on definition of what constitutes family chaos; and it is not clear that all potentially disruptive conditions function to degrade parenting and child development. Consider residential mobility as an example, because it has high relevance for many of the topics discussed here. Frequent movement may create sufficient disturbance that its impacts would likely be detrimental. However, modest residential mobility could have differential impacts depending on whether the move was to a better equipped, more spacious home in a more enriched locale or to a place where accoutrements were



largely lacking (see Murphey, Bandy, & Moore, 2012, for a discussion of the differences).

Wachs and Evans (2009) contend that too much stimulation is disruptive, which raises the issue as to whether homes that contain lots of toys or media devices may present some of the same challenges to parents and children that homes that contain more established forms of chaos. Right now, research on chaos does not address such issues to any appreciable degree. However, findings from several studies in this area, just like studies on media use, suggest that having lots of "good things" may reduce the likelihood of critical positive interactions between household members and potentially lead to nonoptimal realignments of interactions at home. Dynamic systems (chaos) theory suggests the possibility of such realignments and bifurcations in patterns of environment-development relations (Ward, 1995).

## EPILOGUE: THE EVOLUTION OF HABITAT

Throughout most of human history the vast majority of humans lived in small residential facilities that contained very few possessions or amenities and that directly connected to natural surroundings. In developed countries, homes are now more spacious, more complex, and more tightly intertwined with other man-made environments—less so homes in poor countries, but even in poor countries fewer residences connect to natural surroundings (Bradley, 2012). While at home, increasing numbers of children spend less time with others and nature, more time with commercially constructed objects and social networks that lack face-to-face encounters and that may include members vastly different by age, ethnicity, or geography (G. Johnson, 2010). Time while at home or the nearby environment tends to be spent in vastly different types of activities than was the case even a century ago. These differences insinuate themselves into how children think, what they value, and how they form identities.

The physical and connected social conditions now present in daily life also change where family members look for guidance in planning activities and evaluating information. In some ways, the new physical affordances of life have changed social relationships, including parent-child relationships, creating new life niches. Whereas in the past adults have been more expert in how to manage objects and events, there are now increasing instances of children becoming their parents' teachers. Research provides some indication of the consequences of these changes and some

ideas on how best to adapt in the new circumstances. However, research on most issues pertaining to the physical environment is far from adequate and rarely captures the full extent of changes present. What seems clear is that the rapid evolution in human environments requires constant reorganization (Rice, 2012), some of which might be facilitated by access to materials and equipment now more readily available. However, as predicted by dynamic systems theory, some of the changes in affordances may lead to disturbances in patterns of organization present in family life and realignment around new organizational attractors. Just as it seems that the research base to adaptively manage such changes may be lagging the pace of change in our physical and social surroundings, it may also be the case that current theory is not fully up to the challenge of explaining relations between the affordances present in current human habitats and how those are implicated in human development. Thus, extensions of current theory to more precisely address emerging aspects of housing and the physical environment may well be needed to guide productive research and personal agenda. Children's housing and physical environments are now dense with conditions that require more dexterity and precision in the information provided by developmental science if children are to engage in more productive life pathways.

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## CHAPTER 13

# Children in Neighborhoods

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## INTRODUCTION

Several decades of research demonstrate a link between neighborhood residence and human development throughout the life course: literally, from birth until death, and all developmental periods in between. At birth, neighborhood features are associated with newborns' outcomes after individual and family background characteristics are taken into account (e.g., Morenoff, 2003), which may have

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lifelong ramifications for health and well-being. In early childhood, neighborhood conditions continue to matter for children in both the short- and long-term (Dupéré, Leventhal, Crosnoe, & Dion, 2010; Wheaton & Clarke, 2003). In later childhood and adolescence, exposure to neighborhoods increases as youth gain autonomy and spend more time outside of the home (Steinberg & Morris, 2001). During these developmental periods, neighborhoods remain associated with children's functioning, but have unique importance for peer group affiliations, engagement in risky behaviors, and initiation of sexual activity (Leventhal, Dupéré, & Brooks-Gunn, 2009). Continuous exposure to neighborhood disadvantage during the childhood and adolescent years compromises development (Wodtke, Harding, & Elwert, 2011). The potential influence of neighborhood conditions extends beyond these first two decades of life, playing a role in adult health, well-being, and mortality (e.g., Diez-Roux & Mair, 2010) and may



be transmitted to the developmental outcomes of the next generation (Sharkey & Elwert, 2011).

The goal of this chapter is to go beyond enumerating studies that have found connections between neighborhoods and development; we focus on synthesizing findings from methodologically rigorous research to lay a foundation of what we know about *how* and *why* neighborhoods matter for children during the first two decades of life to make recommendations for moving the field forward in both the research and policy arenas. We begin the chapter with an overview of the history and context of neighborhood research, with special attention to the intersections of research and policy. We next turn our attention to defining the neighborhood context for children; broadly, we conceptualize neighborhoods as a proximal social context in which children and families engage in a range of daily activities and interactions with individuals and with institutions that control access to opportunities and resources. By addressing issues of theory and measurement in neighborhood research, we provide a framework for the third section on approaches to studying neighborhood influences on children's development. The fourth section presents a review of the current state of research in the field, integrating multiple aspects of the neighborhood context and synergies with related contexts and individual characteristics. The fifth section then considers the neighborhood as a unit of intervention. Finally, we offer a dynamic framework for the study of neighborhoods and child development before presenting our conclusions.

## PROGRESSIVE ERA TO PROMISE NEIGHBORHOODS

During much of the 20th century, scholarly attention to neighborhoods outpaced policy attention to neighborhoods. Historically, however, this situation was not always the case: Neighborhoods as a target of policy intervention can be traced back to public health and safety efforts launched by social reformers during the Progressive Era (1890s to 1920s). During this era of industrialization and urbanization, attention was given to “slum” or “ghetto” neighborhoods, which were poor areas, often with large immigrant concentrations. This period was marked by advocacy and reform around issues for children, leading to the passage of such protections as child labor regulations and such benefits as the provision of public education. The focus on children was in many ways tied to the real and perceived effects of neighborhood conditions: Concern

over the spread of disease and inadequate housing in poor neighborhoods came into public consciousness, and reformers mounted maternal and child health campaigns in response. Moreover, juvenile delinquency arose as another area of concern, leading to states' creation of juvenile courts, and spurring research on links between neighborhoods and crime and delinquency.

The sociology department at the University of Chicago became a hub for the study of urban sociology and ecology; notably, researchers Robert Park and Ernest Burgess began to use empirical methods to study urban social changes and related problems, focusing on crime and delinquency, with adolescent peer groups featuring prominently (Park & Burgess, 1925). Their work in the 1920s and subsequent work of others from the Chicago School identified factors such as economic disadvantage, ethnic heterogeneity, and residential instability as neighborhood conditions associated with elevated rates of crime and delinquency. In a seminal book for the field of neighborhood research, Shaw and McKay (1942) empirically demonstrated that high rates of delinquency persisted over time in certain neighborhoods despite concurrent residential turnover; this finding suggested that delinquency could be transmitted at the neighborhood level, and was therefore not solely an individual-level problem (see Sampson & Morenoff, 1997).

Policy interest in neighborhoods waned after the Progressive Era, but sociologists continued neighborhood research over the next decades of the twentieth century, albeit with less explicit attention to adolescents or children. Further, policies not directly targeting neighborhoods (e.g., housing, school districting) continued to shape neighborhoods during this period. Changing demographic patterns, notably rising concentrations of unemployment and poverty and growing economic and racial segregation in urban centers throughout the 1970s and 1980s, once again ignited policy interest in neighborhoods (e.g., Massey & Denton, 1993). Much of the focus was, and continues to be, on the types of neighborhoods identified by William Julius Wilson in his 1987 landmark book, *The Truly Disadvantaged*: geographically isolated, urban neighborhoods that are high in poverty (over 40% of residents living below the poverty threshold), with high concentrations of minorities. Shaw and McKay's (1942) book suggested a neighborhood-level focus for delinquency decades earlier, but it was Wilson's (1987) book that shifted academic and policy discussions on poverty from the individual to the neighborhood. These discussions around place and poverty prompted multidisciplinary research initiatives, which have grown substantially since the mid-1990s (Sampson,

Morenoff, & Gannon-Rowley, 2002). Further, research attention moved beyond simply studying neighborhood poverty or more general disadvantage to include questions about a broader set of neighborhood economic and social conditions and their links to children's development (Leventhal & Brooks-Gunn, 2000).

As neighborhood research grew exponentially, neighborhood policies evolved incrementally, continuing to focus primarily on poverty. Particular interest in the "broken windows" theory, which suggests that signs of social and physical disorder in neighborhoods lead to increases in antisocial behaviors and crime (J. Q. Wilson & Kelling, 1982), contributed to policy changes in many municipalities: Order-maintenance policing was a major initiative in many cities throughout the 1990s (Harcourt, 1998). Such policies were not clearly supported by empirical evidence (e.g., Cerdá et al., 2009), but they reflect a reinvestment in neighborhoods as a focus of policy during the 1990s. Although order-maintenance policing typically targets young men (Braga, Kennedy, Waring, & Piehl, 2001) and as such is relevant for developmental scientists, these initiatives were not shaped by research from a child development perspective.

Other major initiatives also were undertaken at the federal level during this era, largely through the auspices of the U.S. Department of Housing and Urban Development (HUD). Neighborhoods are tightly linked to housing. The presence of public housing projects frequently concentrates poverty in a neighborhood, and beyond this practice, affordable housing is generally not equally or randomly distributed in neighborhoods (Schwartz, 2010). Thus, housing policy plays a critical role in shaping neighborhood contexts. While the United States saw a renewed interest in socially mixed neighborhoods as an explicit goal of affordable housing policy during the 1990s, these policies were already in place in one form or another since the 1970s in many European countries (e.g., Andersson, Musterd, Galster, & Kauppinen, 2007). In the United States, many HUD initiatives focus primarily on tax incentives for economic development, but others, such as Housing Opportunities for People Everywhere (HOPE) VI, have been more directly tied to children and families. The HOPE VI program began in the early 1990s with the goal of improving severely distressed public housing and reducing the concentration of poverty in neighborhoods with assisted housing by creating mixed income communities. Notably, the United States Congress commissioned research initiatives to understand the impact of the program on residents (Popkin, Levy, & Buron, 2009).

Aside from this major federal initiative that began in the 1990s, local community-based initiatives, with roots in the Progressive Era, have been ongoing, both within and beyond the United States. In fact, predating many of the U.S. efforts, during the 1980s France initiated policies to improve economic opportunity and education in targeted Critical Urban Areas—neighborhoods where unemployment was disproportionately high (Debrand, Pierre, Allonier, & Lucas-Gabrielli, 2012). Japan introduced "hometown-making" policies in the 1980s with the goal of building social connections in urban neighborhoods (Wissink & Hazelzet, 2012). Many of these policies, including these two examples, do not have children's development as a core feature.

In contrast, one community-based initiative that received extensive media coverage, the Harlem Children's Zone (HCZ), made child development its centerpiece. HCZ began in 1990 as a pilot project in just one block of Harlem, but grew to cover a 100-block area in Harlem and became the model for President Obama's federal Promise Neighborhoods initiative (Komro, Flay, & Biglan, 2011). It was not until the announcement of the Promise Neighborhoods initiative in 2009 that a clear focus on neighborhood composition, child development, and policy action garnered national attention in the United States. Promise Neighborhoods is administered through the U.S. Department of Education and evaluation of how program strategies relate to children's outcomes is one of its goals. Further, the National Institute on Drug Abuse funded a Promise Neighborhoods Research Consortium to ensure these initiatives have access to research-based knowledge on community change and child outcomes (Komro et al., 2011).

Clearly, the relation between neighborhood-based research and policy has ebbed and flowed over the years. The policy demand for such research stems, in part, from historical and demographic factors and, in part, from the growing quantity and quality of the research. In the remainder of this chapter, we conceive of the relation between neighborhood-based research and policy as mutually influential (Dowsett, Huston, Imes, & Gennetian, 2008). With this overview in mind, we now turn to the conceptual and methodological framework guiding this chapter.

## DEFINING THE NEIGHBORHOOD CONTEXT FOR CHILDREN

In recent decades, the study of children and adolescents has placed greater attention on the dynamic interactions

between individuals and their contexts. Bronfenbrenner's seminal writings on the ecology of human development (Bronfenbrenner & Morris, 2006) were a clear departure from the strict psychological study of development, which focused on the individual and his or her immediate context, typically the family. More recently, relational developmental systems theories (Lerner, 2006; see also Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1) have come to the forefront in the study of human development, providing a useful framework for understanding the complexities of individuals embedded within contexts from time to culture, and including neighborhoods. These theories emphasize the mutual influences of individuals and contexts on one another (i.e., their bidirectional nature), and reject the premise that it is possible to separate the various levels in the developmental system (Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1).

For the study of neighborhoods, these theories help to understand how the neighborhood context influences child development, but also how these influences are affected by other contexts such as families, peers, schools, and the like as well as interactions with individual characteristics such as gender, race/ethnicity, and personality. Further, the emphasis of these theories on developmental as well as historical timing underscores the importance of examining neighborhood contexts as potentially having different associations with developmental pathways at different points in the life course (see Elder, Shanahan & Jennings, Chapter 2, this *Handbook*, this volume). For example, very young children's interactions with their neighborhood contexts may be controlled largely by their parents, whereas adolescents may engage more closely with the people, institutions, and physical aspects of their neighborhoods, and potentially have a direct influence over neighborhood features through their actions and behaviors. Thus, in defining the neighborhood context for children, we focus on the elements of neighborhoods that help describe and explain features of development beyond the family unit, while recognizing that neighborhoods and families are interactive parts of the developmental system.

One of the challenges in understanding the importance of neighborhoods for development is that neighborhoods are collections of individual families. This problem of endogeneity (or selection bias) can be summed up by the fact that people are not randomly assigned to neighborhoods, but rather have varying degrees of choice regarding where they live. For children, it is typically parents who

are responsible for making locational decisions. Parental characteristics and family circumstances are strongly related to neighborhood of residence, and these parent and family background characteristics also are strongly related to children's development. Moreover, throughout the life course neighborhood and family characteristics may shift together, and earlier features of the developmental context are predictive of later features (Elder et al., Chapter 2, this *Handbook*, this volume). Younger families are, on average, more likely to live in less affluent neighborhoods than families with older children and adolescents, but as children age into elementary school, families are more likely to move from urban to suburban settings (South & Crowder, 1997). Non-normative life events, such as parental divorce or job loss and unemployment, which have clear implications for children in and of themselves (see Ganong, Coleman & Russell, Chapter 4, this *Handbook*, this volume), are also associated with the risk of moving to poorer neighborhoods (Sampson & Sharkey, 2008; South & Crowder, 1997).

It is, therefore, challenging to understand the role neighborhoods play in child development beyond more proximal family effects. Care must be taken both in designing studies to assess these intertwined levels of context, and also in applying statistical techniques to disentangle these overlapping contexts. For these reasons, studies that do not attempt to address the influence of family background simultaneously with neighborhood characteristics when examining children's development are given limited attention or simply excluded from this chapter.

### Neighborhood Boundaries

Before defining the array of neighborhood features that contribute to the study of child development, we must further clarify: What is a neighborhood? Most often, researchers use boundaries identified by the U.S. Decennial Census, or comparable national statistical areas (e.g., Enumeration Areas in Canada and *Îlots Regroupés pour l'Information Statistique* or aggregated units for statistical information in France). In the United States, the units of analysis most frequently used are the census tract (approximately 3,000 to 8,000 people) and census block group (600 to 3,000 people), although some researchers combine adjacent and relatively homogenous tracts or block groups to form neighborhood clusters (e.g., Brody et al., 2001; Sampson, Raudenbush, & Earls, 1997). Others have used geographic information systems (GIS) tools to incorporate information on the neighborhood tracts or block

groups surrounding a participants' own neighborhood (e.g., Hillsdon, Panter, Foster, & Jones, 2006).

Using these neighborhood boundaries for research on child development has both advantages and disadvantages. One of the greatest advantages is the access to consistent, reliable information on the structural characteristics of neighborhoods; that is, the compositional or sociodemographic attributes of the area, such as median income, employment rate, and racial composition. It is important to note that recent changes to sampling in the census and the related American Community Survey (ACS) have raised some concerns about the quality of information available on neighborhood sociodemographics. Census tracts are identified with the advice of local communities working under Census Bureau guidelines to reflect prominent physical and social features that separate neighborhoods, such as highways, railroads, parks, ethnic divisions, and the like, and typically represent meaningful neighborhood divisions. Further, some evidence suggests that residents' perceptions of their neighborhood boundaries are similar in size to a census tract (Sampson, 1997).

Still, these boundaries are selected once every 10 years in the United States, with similar timing in other developed countries, so neighborhood measurements are often asynchronous with measures of children and families. Similarly, despite high levels of stability in neighborhood features (Sampson, 2012), neighborhoods change, with important ramifications for children who live in them (Leventhal & Brooks-Gunn, 2011). Recent changes to the ACS provide ongoing measurement of neighborhood structure in the United States, but require aggregation over several years due to sampling error. Finally, the U.S. Census does not include measures of neighborhood processes. Distinct from neighborhood structure, neighborhood processes entail aspects such as institutional resources and social organization, which are discussed in more detail in the following sections.

### Neighborhood Structure

Neighborhood socioeconomic status (SES)—a combination of social and economic indicators—is the most commonly studied structural dimension of neighborhoods. Other important neighborhood structural characteristics include racial/ethnic composition and residential stability. Despite general consistency across studies, specific definitions of these and other structural dimensions differ somewhat, and often are based on a factor analysis of theoretically relevant indicators.

For example, a factor analysis of 10 census variables for neighborhood clusters in Chicago identified three distinct factors: concentrated disadvantage (rates of poverty, receipt of public assistance, unemployment, female-headed families, density of children, and percentage of African American residents), immigrant concentration (percent Latino/a Americans and foreign-born residents), and residential stability (percent households in same house as 5 years earlier and owner-occupied homes; Sampson & Morenoff, 1997). Although race and ethnicity are strongly linked to other neighborhood structural features in the United States (e.g., poverty), researchers generally separate dimensions of race and ethnicity (i.e., percent African and Latino/a Americans) from other indicators of neighborhood structure to distinguish the relative contribution of neighborhood racial/ethnic composition from these other features (Leventhal, Xue, & Brooks-Gunn, 2006).

Further, researchers often separate measures of neighborhood SES into high SES (e.g., percent high-income residents, percent professionals, and percent college educated), also referred to as affluence or advantage, and low SES (e.g., percent poor residents, percent female-headed households, percent on public assistance, and percent unemployed), also referred to as poverty or disadvantage, because the presence of poor and affluent neighbors may have differential associations with children's outcomes (Jencks & Mayer, 1990). As described in more detail in the next section, it is likely that neighborhood affluence is associated with children's development through different pathways than neighborhood poverty, with neighborhood affluence being different from the simple absence of neighborhood poverty, and vice versa.

Neighborhood structural characteristics are not independent of one another. That is, the percentage of college-educated adults in a neighborhood is correlated with the percentage of employed adults and with the percentage of families living in poverty, and so on. Including only some pieces of information will bias the estimates of neighborhood-level effects, and thus researchers must pay careful attention to which neighborhood characteristics are included in their analytic models. This problem of omitted variables at the contextual level is common, but often overlooked in neighborhood research (Duncan & Raudenbush, 2001), and to some extent in developmental science in general (Elder, 1998). Thus, theory-driven research is critical and supports the use of composite measures of neighborhood structural features when a more fine-grained variable approach is not theoretically warranted.



### Neighborhood Processes

The neighborhood processes most often discussed in the literature revolve around access to high quality local institutions, and around social interactions in less formalized settings. This section briefly presents these two types of neighborhood processes, as well as measurement strategies developed to index these less tangible processes.

### *Neighborhood Institutional Resources*

The quantity, quality, diversity, and affordability of programs and resources at the neighborhood level are an aspect of neighborhoods that is likely to be important for child development, as well as a potential pathway through which neighborhood structural characteristics may influence child development (Leventhal & Brooks-Gunn, 2000). The range of resources that are likely to be important is broad, and includes childcare and preschool programs, schools, after-school and summer programs, libraries, health and social services, parks, recreational and social programs, grocery stores, transportation, and employment opportunities for adolescents and adults. Data to evaluate these myriad resources are not always readily available, at least in forms that correspond to the neighborhood boundaries defined by the census.

Nonetheless, it is possible to capture the availability of institutional resources through a variety of methods. One approach is simply to ask residents about the types of resources available in their neighborhoods (e.g., Sampson, Morenoff, & Raudenbush, 2005). This strategy is advantageous in that it is also possible to ask which of these resources residents use, and what types of resources they go beyond their neighborhoods to access (Jarrett, 1999); evidence suggests that it is important to ascertain not only what is available in the neighborhood, but to whom it is available (Small, 2006). A drawback to survey methods of this type is that respondents are rarely asked how they define their neighborhood boundaries, yielding a relatively subjective perspective on institutional resources. In addition, residents' knowledge of these resources may not reflect the objective reality.

Recent innovations in technology and mapping allow researchers to create more objective definitions of neighborhood boundaries and of the resources themselves than those based solely on participants' reports. Public health research has made numerous contributions to this line of work using GIS mapping techniques, particularly to look at families' access to green space and healthy foods

(e.g., Hillsdon et al., 2006). GIS often can be linked to administrative and public data (e.g., registries of licensed child care providers) to obtain a wide variety of indicators for neighborhood institutional resources. Online mapping tools, notably Google Street View, are another promising approach to quantifying the types of neighborhood institutional resources that are readily visible, particularly parks. To date, only a few studies examine the overlap in these approaches, but some evidence suggests these tools reliably can be used to measure resources that are meaningful for children (Odgers, Caspi, Bates, Sampson, & Moffitt, 2012).

Despite these advances, none of the novel methodologies described here captures the quality of resources available in neighborhoods. However, the quality of the institutional resources should have an important moderating role on how the availability of resources is linked to children's development. For example, a large park may appear to be available in a neighborhood through mapping tools, but if it is often used for selling drugs, it is not likely to be beneficial for children. Similarly, although childcare facilities and schools may be available, if they are of low quality then they are unlikely to promote achievement. Numerous studies document that resources are often of lower quality in more disadvantaged neighborhoods (e.g., Burchinal, Nelson, Carlson, & Brooks-Gunn, 2008), and thus more intensive data collection to understand the quality of resources in neighborhoods remains an important avenue for future research.

### *Neighborhood Social Organization*

Neighborhood social organization is another feature of neighborhoods likely to matter for children, and also may help explain how neighborhood structural features relate to their development (Leventhal & Brooks-Gunn, 2000). Like neighborhood institutional resources, social organization is complex, multifaceted, and not always easy to measure. The elements of social organization most often assessed are collective efficacy and disorder.

Collective efficacy refers to both informal social control and social cohesion at the neighborhood level (Elliott et al., 1996; Sampson et al., 1997), and is measured predominantly through survey items, although expert surveys with key community leaders also can be informative (Sampson, 2012). Informal social control depicts the degree to which residents monitor the behavior of others in accordance with socially accepted practices, and is captured by items such as: "If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would

do something about it?” Social cohesion is the extent of perceived similarities and connectedness among residents, represented by items that ask about how “close-knit” the neighborhood is, and whether people in the neighborhood can be trusted.

Neighborhood disorder can be either physical (e.g., abandoned housing and graffiti) or social (e.g., public drinking and prostitution; Sampson & Raudenbush, 1999). Both aspects of disorder are frequently assessed using surveys, but physical disorder in particular lends itself well to observational measures, known as systematic social observations (SSOs). SSOs involve trained observers using a structured format to characterize neighborhoods through videotaping, rater checklists, or audiotaping (Kohen, Brooks-Gunn, Leventhal, & Hertzman, 2002; Sampson, 2012). Although SSOs also are used for assessing social disorder, signs of social disorder tend to appear sporadically and therefore are more challenging to capture during observations than more concrete signs of physical disorder (Raudenbush & Sampson, 1999), making surveys an appealing option. Despite the advantages of using SSOs to assess disorder objectively (versus surveys) and for clearly defined neighborhoods, they are typically expensive to execute and time-intensive to code. New technologies, as described earlier (Odgers, Caspi, Bates, et al., 2012), provide promising approaches for obtaining cost-effective and timely data on neighborhoods.

Exposure to crime and violence are other neighborhood social processes frequently studied in research pertaining to children. They are evaluated with administrative data such as police records, known as uniform crime reports, or through survey items assessing families’ perceptions of safety (e.g., Molnar, Gortmaker, Bull, & Buka, 2004). Additional constructs that have received somewhat less attention in the developmental literature include the extent of neighborhood social networks, such as close friends and family members, as well as social capital (e.g., Leventhal & Shuey, 2014). Social capital is another multidimensional construct that refers to neighborhood residents’ abilities to achieve various goals, and is defined in numerous ways to include social support, information channels, social leverage, participation in neighborhood organizations, civic engagement, social norms, and informal social control (Coleman, 1988).

### ***Measuring Neighborhood Processes***

A number of approaches to measuring neighborhood processes were described in the preceding sections; however,

a few points merit further attention. First, there are two approaches to obtaining survey data on neighborhood processes: Using individual parents’ or children’s ratings, collected from the same sample as the individual- and family-level data, and using an independent sample of community respondents. Researchers often rely upon the former, but these ratings are problematic because they often are confounded with child outcome measures also obtained by means of participant ratings, leading to problems of shared method variance. Second, the reliability of such measures may be questionable because in most cases it relies on individual rather than ecological data and corresponding methods for handling data. In other words, sampling is not done purposively to obtain large enough samples within neighborhoods to truly measure neighborhood (and not individual) differences in processes. Raudenbush and Sampson (1999) lay out a compelling argument for “ecometric” standards of gathering data from multiple reporters (preferably independent of study families) to enhance reliability of neighborhood measures and to use appropriate statistical tools to generate neighborhood-level reliability indices. This alternative approach to gathering survey data on neighborhood processes consists of conducting a community survey with a sample of nonparticipants in each study neighborhood (ideally at least 15 to 30 respondents per neighborhood), yielding measures of neighborhood processes that are independent from those obtained by study participants. Note that it is possible to generate similar ecometric measures of neighborhood processes for sampled children and families if the study design incorporates neighborhoods as described in the next section.

Third, there are a number of alternative methodologies to measure neighborhood processes in addition to surveys and to SSOs and GIS approaches described earlier. Rather than interviewing a sample of neighborhood residents, neighborhood expert surveys may be conducted, which requires identifying and surveying key community leaders such as prominent religious, political, business, and social leaders about their neighborhoods (Sampson, 2012; Tobler, Komro, & Maldonado-Molina, 2009). Finally, besides the types of administrative data already mentioned, alternative data sources from city, state, and federal agencies may include vital statistics from health departments, school records from education departments, and child abuse and neglect records from human and social service agencies (Coulton & Korbin, 2007). There are also publicly available data sources often produced for commercial purposes.

## APPROACHES TO STUDYING NEIGHBORHOOD INFLUENCES ON CHILDREN'S DEVELOPMENT

Researchers employing the varying methodologies described in the previous section have used nonexperimental and experimental designs to study neighborhood influences on children's development. Each approach is reviewed in turn.

### Nonexperimental Approaches

The first phase of nonexperimental research investigating associations between children's neighborhood of residence and their developmental outcomes used census-based measures of neighborhood structural characteristics (e.g., concentrated poverty, racial composition) in conjunction with data collected on children and their families. This early work was based on two general types of studies. One type was large national data sets, such as the Panel Study of Income Dynamics (PSID; Hill, 1991) and the National Longitudinal Survey of Youth–Child Supplement (NLSY-CS; Baker & Mott, 1989). These studies had substantial variation in neighborhood (and family) types as well as in the age of sampled children and permitted estimation of neighborhood effects based on few children per neighborhood. The second type of study was single-city or regional samples of children, typically school age or older, where the number and types of neighborhoods sampled varied widely across studies. These studies were often composed of primarily urban, low-income neighborhoods, with well-known examples including the Pittsburgh Youth Study (Loeber & Wikström, 1993) and the Beginning School Study in Baltimore (Entwisle, Alexander, & Olson, 1994).

These early studies with appended census data were often cross-sectional. As such, they were primarily useful for documenting associations between neighborhood structural characteristics and children and adolescents' outcomes at a single point in time. A major limitation of this research was that it did not provide much information about the dynamic and bidirectional relation over the course of development between children and their neighborhoods, which also may change through a variety of internal or external processes (Leventhal & Brooks-Gunn, 2011).

The next phase of neighborhood research, which incorporated neighborhoods into the study design, addressed many of these shortcomings. In neighborhood-based studies, a wide range of neighborhood types may be examined (e.g., those from a variety of sociodemographic makeups),

or specific types of neighborhoods may be sampled (e.g., only low- and moderate-poverty neighborhoods). In addition, sampling is done to ensure an adequate number of children per neighborhood (e.g., approximately 10 study participants per neighborhood depending on study design) to permit multilevel (or hierarchical), longitudinal analyses. Multilevel analyses generate estimates of variation in child outcomes both within and between neighborhoods, yielding more reliable estimates of neighborhood effects on children's development.

One well-known example of a neighborhood-based study is the Project on Human Development in Chicago Neighborhoods (PHDCN), in which census data were used to define two stratification variables—SES (three levels) and racial–ethnic composition (seven levels)—that were cross-classified, and then a stratified probability sample of 80 neighborhood clusters was selected for the longitudinal component of the study (Leventhal & Brooks-Gunn, 2003b). Finally, approximately 1,000 children falling within each of seven age cohorts spanning from birth through 18 years of age were sampled from these 80 neighborhoods and followed in three waves of data collection over 6 years; approximately 75 children per neighborhood cluster (at Wave 1) were interviewed. In addition, PHDCN included repeated independent community surveys, systematic social observations, and expert surveys as described previously.

Another example is the Los Angeles Family and Neighborhood Survey (LA FANS), which randomly sampled 65 neighborhoods, defined as census tracts, in Los Angeles County stratified by poverty level (i.e., very poor, poor, and nonpoor). Within each of these neighborhoods, 50 households were sampled across blocks within each tract, and those with children under 18 years of age were oversampled (70% of sample), resulting in a final sample of over 3,000 children. Children and their families were followed over approximately 6 years in two waves of data collection. A unique feature of this study is that an additional sample of new entrants into the sampled neighborhoods was added during Wave 2 of data collection to permit an examination of selection into and out of neighborhoods (Sasstry, Ghosh-Dastidar, Adams, & Pebley, 2006). Sources of neighborhood data include the census, other administrative and public data sources, systematic social observations, and self-reports by respondents that can be aggregated to the neighborhood level to mimic a community survey (though the sample is not independent).

Although neighborhood-based designs offer numerous advantages over earlier studies as just described, they

remain nonexperimental and as such have been criticized for failing to address the problem of selection bias reviewed in the previous section. That is, families self-select their neighborhoods, and factors that determine neighborhood choice also may drive associations between neighborhood residence and children's development. The most common strategy used to minimize this selection problem is to account for child (e.g., gender and age) and family demographic (e.g., income, parent education, family structure) characteristics in analytic models as described earlier. This approach is essential because neighborhood characteristics are defined in part by family composition; however, it does not fully overcome the problem of selection because many important hypothesized omitted variables such as parental depression, motivation, organization, and the like are not included in most nonexperimental neighborhoods studies. In addition, the nature of the bias resulting from the omission of such variables remains unclear. For example, parents who are depressed may be more likely to remain with their children in disadvantaged neighborhoods than parents who are not depressed. Conversely, more motivated parents may be more likely to stay in disadvantaged neighborhoods to conserve funds for children's social and recreational activities than less motivated parents.

Despite potential selection problems due to unobserved variables, a study examining factors associated with neighborhood selection among PHDCN families found that hypothesized omitted variables, such as those mentioned, contributed little to neighborhood selection beyond family socioeconomic characteristics routinely controlled for in neighborhood studies, notably income, parental education, and race/ethnicity (Sampson & Sharkey, 2008). In fact, these same authors, as well as others (Wodtke et al., 2011) have argued that by including too many family background characteristics (e.g., family structure, parent employment) in analytic models, researchers may be overcontrolling for family characteristics that account for neighborhood associations with children's development. In light of this argument, we recommend controlling for key family demographic characteristics (i.e., income, parental education, and race/ethnicity) *at a minimum* for any study of neighborhood effects on children's development and that more extensive covariates be included in a conceptually driven manner as needed.

Beyond simply controlling for background characteristics, researchers have employed a number of analytic strategies designed to more rigorously address selection problems in nonexperimental research. These approaches include comparisons of siblings or first cousins, which

essentially holds family characteristics constant, but not neighborhood exposure (Aaronson, 1997). A related approach is to use fixed effects, which takes advantage of variation in individual's own exposure to different neighborhood characteristics over time, thus holding family characteristics constant; however, sufficient variation in children's life-course exposure to different types of neighborhood conditions is often limited (e.g., Timberlake, 2007). Instrumental variable analyses minimize unmeasured correlations between neighborhood characteristics and children's outcomes by means of a two-stage regression approach (Foster & McLanahan, 1996). Propensity score methods and variants of it use a variety of strategies to match children who are otherwise similar on a wide array of observed background characteristics except for the types of neighborhoods in which they live (e.g., Wodtke et al., 2011); this approach does not address unobserved confounds. Finally, behavior genetics models attempt to distinguish between genetic and environmental influences on children's development (Caspi, Taylor, Moffitt, & Plomin, 2000; Cleveland, 2003). Although these methods are an advance over merely controlling for background characteristics, they have their own inherent limitations, a discussion of which is beyond the scope of this chapter, but most notable: They do not fully overcome the omitted variable problem in neighborhood research; other selection problems may arise if select samples are employed; and they may be limited in the extent to which they can capture developmental processes.

### Experimental and Quasi-Experimental Approaches

Experimental and quasi-experimental studies of neighborhood effects on children's development have used two general strategies. The first and more established approach has been to evaluate housing programs for low-income families that randomly assign families to live in certain types of neighborhoods. Because these programs cannot serve all eligible or interested families, selection of neighborhoods is often random, based on housing availability (i.e., quasirandom), or both. In these studies, a subset of families is typically offered assistance in relocating from high-poverty neighborhoods to less poor areas (e.g., they may receive assistance to rent housing in the private market or be offered housing assistance in nonpoor neighborhoods).

The oldest quasi-experimental study is the Gautreaux Program, which was the result of a 1976 court order to desegregate Chicago's public housing. During its operation from 1976 to 1998, over 7,000 families were given



housing vouchers (or rent subsidies) that were to be used in low-poverty, racially integrated neighborhoods, with a majority of families to be placed outside of the city limits (Rubinowitz & Rosenbaum, 2000). Because of limited housing availability at times, families were placed inside and outside of the city based on housing availability that was presumably random. A more recent example, based on a true experimental design, is the Moving to Opportunity for Fair Housing Demonstration (MTO), sponsored by HUD in 1994, partially in response to favorable findings reported in the Gautreaux Program and renewed interest in socially mixed housing at that time, as discussed earlier. Approximately 4,600 families across five cities were randomly assigned vouchers to move out of public housing in high-poverty neighborhoods into private housing of their choice or into private housing in low-poverty neighborhoods (with special assistance); by design, a subset remained in their original public housing units (Goering & Feins, 2003).

The second strategy for conducting experimental neighborhood studies, which is relatively new, is the use of natural experiments in which some exogenous shock (e.g., policy change, natural disaster) occurs that differentially affects either neighborhoods or individuals' residential location. Examples of the former approach are investigations of the impact of changes in environmental regulations, assessed at either the county or zip code level, on children's health (e.g., Currie & Neidell, 2005) and an evaluation of the impact of a major transit system and local investment in impoverished, isolated communities in Colombia on crime and violence (Cerdá et al., 2012). Examples of the latter approach are a study that examined how changes in neighborhood residence resulting from the devastation of Hurricane Katrina affected inmates' recidivism after they were released from prison (Kirk, 2009), and a study that explored how community characteristics were associated with children's educational outcomes when a sudden influx of Ethiopian immigrants to Israel led to families' random assignment to absorption centers scattered across the country (Gould, Lavy, & Paserman, 2004).

## **A REVIEW OF NEIGHBORHOOD INFLUENCES ON CHILDREN'S DEVELOPMENT**

In this section, we use a relational developmental systems perspective, described previously, to review the current state of knowledge on neighborhood influences on children's development from early childhood to late

adolescence. This perspective serves as the foundation for answering several key questions the field has addressed over the past several decades: (1) Is neighborhood context associated with children's development? (2) How is neighborhood context associated with children's development? And (3) for whom does neighborhood context matter most? At the heart of these three questions are considerations of the relations between individuals and contexts. To address the first question on links between neighborhood context and children's development, we focus on both neighborhood structure and processes and their associations with a broad range of child and adolescent outcomes (cognitive, social, and emotional functioning). In answering the second question on pathways of influence, we consider the interconnections between neighborhoods and other salient social contexts, namely families, peers, and schools, in shaping children's development. The last question on "for whom" centers on what is known about person-context interactions, addressing how individual attributes such as gender, race/ethnicity, immigrant status, and psychological and biological vulnerabilities moderate associations between neighborhood context and children's development.

Because the field of neighborhood research has proliferated during the past several decades (Sampson et al., 2002), this section of the chapter, as in our previous reviews, draws most heavily upon studies that meet certain standards of quality and rigor. Most notably, given the serious problem of selection or omitted variable bias in neighborhood research, as discussed previously, we generally only review studies that account for individual and family characteristics, such as child gender, age, and race/ethnicity, family income and composition, and maternal education, age, and the like, in the analysis. When possible, we highlight longitudinal studies, those using neighborhood designs and methodologies, and those employing alternative analytic methods to address selection. In doing so, our goal is to rely on the strongest evidence possible for making some general conclusions about what we currently know about neighborhood influences on children's development. Finally, in this section, to the extent possible, we review studies beyond the United States to provide evidence of cross-national replication. Addressing the generalizability of research conducted in the United States is critical for documenting the salience of neighborhood context for children's development.

In the following sections, we address how neighborhood structure and processes are associated with children's development. Our framework for this review takes as its

starting point that neighborhood structure, or its compositional characteristics, such as poverty, racial-ethnic makeup, and the like, are distinct from neighborhood processes, such as institutional quality or collective efficacy, which entail social interactions with individuals and institutions within neighborhoods. Distinguishing these aspects is critical because although neighborhood structure and processes are often related (e.g., Cook, Herman, Phillips, & Settersten, 2002), structural characteristics are generally thought to provide the conditions under which processes are facilitated. Thus, for conceptual purposes, neighborhood structure is conceived of as a major driver of neighborhood processes. As a result, these sections highlight studies that incorporate structural measures along with process measures. Neighborhood processes are central for understanding *how* neighborhoods influence children's development, but without addressing structure we cannot rule out omitted variable bias at the neighborhood level.

### Neighborhood Structure and Children's Development

This review builds on our previously published summaries of the neighborhood research (Fauth, Leventhal, & Brooks-Gunn, 2005; Leventhal & Brooks-Gunn, 2000; Leventhal & Brooks-Gunn, 2003a; Leventhal et al., 2009) as well as reviews by others (Burton & Jarrett, 2000; McBride Murry, Berkel, Gaylord-Harden, Copeland-Linder, & Nation, 2011; Nettles, Caughy, & O'Campo, 2008; Sampson et al., 2002). With respect to neighborhood structure, research largely examines three structural dimensions (assessed by the census)—income/SES (high-SES/affluence and low-SES/poverty), racial/ethnic diversity, and residential instability. Because most of this work points to the salience of neighborhood income/SES, we focus primarily on this dimension, but bring in other aspects as relevant.

Before we consider the connection between neighborhood SES and children's development, it is important to highlight several demographic trends that likely bear on these relations. The period from 1970 to 1990—captured in much extant research—was marked by rising economic and racial segregation at the neighborhood level (Jargowsky, 1997; Massey, 1996; W. J. Wilson, 1996). Although much attention was placed on the increasing concentration of poverty during this time, the concentration of affluence grew even more extreme than the concentration of poverty over this period (Massey, Fischer, Dickens, & Levy, 2003). Both factors contributed to rising inequality and racial stratification. A slight reversal

of these trends occurred during the 1990s, particularly in large metropolitan areas where inequality was most pronounced (Ellen & O'Regan, 2008; Jargowsky, 2003), but the overall pattern of economic segregation not only persists into the 21st century, but has continued to expand (Kneebone, Nadeau, & Berube, 2011; Reardon & Bischoff, 2011). As noted earlier, these trends were an impetus for the field of neighborhood research, but also provide a general backdrop for the pattern of results described in the following section.

The extent to which these trends and the resulting implications for children's development generalize to other countries merits mention. Sweeping parallels have been drawn between structural disadvantage in the United States and in Europe (e.g., Wacquant, 2008). Despite such parallels, the isolation and historical marginalization of predominantly African American neighborhoods in the United States (Massey & Denton, 1993; W. J. Wilson, 1987) is distinct from demographic patterns seen in Europe or Canada (Oreopoulos, 2008; Wacquant, 2008); however, immigrant neighborhoods in some European cities are somewhat similar in terms of the lack of access to economic and institutional resources, albeit on a smaller scale (Sampson, 2012). Debate continues over the nature and size of neighborhood effects in Europe (Andersson & Musterd, 2005; see also Galster, 2012), but evidence suggests similarities between neighborhood function in the United States and elsewhere. With this background, we turn in the remainder of this section to a summary of findings on the role of neighborhood SES for children's development first from various nonexperimental strategies, starting with snapshot approaches, then longitudinal studies and ending with experimental work.

### *Snapshot Approaches to Neighborhood SES*

Nonexperimental studies generally take either a cross-sectional approach, as described earlier, or use data from longitudinal studies of child development, but in fact use only a single point in time to measure neighborhood SES. That is, neighborhood SES, and to a lesser extent children's development, are seen as relatively static and thus these studies capture only a snapshot of children's neighborhood experiences (for a similar argument, see Jackson & Mare, 2007; Sampson, 2008). Because this review follows in the footsteps of many others (e.g., Leventhal & Brooks-Gunn, 2000; Leventhal et al., 2009; Sampson et al., 2002), we briefly summarize the conclusions of this body of work. A first conclusion drawn is that the nature of these associations depends on the aspect of SES and the outcome

under investigation. Specifically, neighborhood high SES is favorably associated with children's and adolescents' achievement-related outcomes, such as school readiness, test scores, academic performance, and educational attainment; this pattern was reaffirmed in a meta-analysis (O. Johnson, 2013; but for potential downsides of neighborhood affluence see Luthar, 2003). Conversely, neighborhood low SES is adversely linked to children's and adolescents' social, emotional, and behavioral outcome including behavior problems, depression, delinquency, and deviant peer group affiliation. It is also associated with adolescents' risky sexual behavior and fertility outcomes.

A second conclusion drawn is that the size of neighborhood SES "effects" in this research is small to moderate. Neighborhood SES (high or low) generally accounts for approximately 5% to 10% of the variance in developmental outcomes after covarying for child and family background characteristics. Although few of these studies compared the size of effects within a single sample (e.g., Leventhal & Brooks-Gunn, 2001), associations are quite comparable in magnitude for children and adolescents and across outcomes.

Despite these rather consistent patterns, this research has been criticized on the grounds of selection bias (e.g., Duncan, Connell, & Klebanov, 1997; Manski, 2000). To address this concern, researchers have used more robust analytic techniques as described earlier (see the section "Nonexperimental Approaches") than standard regression with covariates employed in much of this extant work. Across these studies, the general conclusions are not substantially altered; however, effect sizes tend to be reduced in most cases and some studies fail to report any associations.

We view this snapshot approach as an important first step in documenting trends, but it does not reflect a relational developmental systems perspective wherein individuals, contexts, and their relations are construed as dynamic over time. More recent work incorporating a longitudinal perspective, notably with respect to neighborhoods, has emerged.

### *Longitudinal Approaches to Neighborhood SES*

Several descriptive studies employing national longitudinal data examine children's exposure to neighborhood SES. Yet, this small research base does not address the source of shifts in SES that occur over the course of childhood (e.g., mobility versus internal neighborhood dynamics) and the diversity in children's exposure to both neighborhood poverty and affluence during this period (e.g., Sharkey,

2008; Timberlake, 2007). Families' circumstances generally improve over time as their children age (Leventhal & Brooks-Gunn, 2001); however, stability in overall neighborhood conditions—level and rank ordering—is prevalent and driven by race/ethnicity. For example, based on estimates from the 1970s to 1990s, long-term exposure (at least 50% of the first 18 years of life) to high-poverty neighborhoods (defined as poverty rate > 20%) was common among African American children and, to a lesser extent, Latino/a American children, but quite rare among European American children, who conversely were disproportionately exposed to the lowest poverty neighborhoods (defined as poverty rate < 20%; Timberlake, 2007). Neighborhood SES during childhood has implications for later exposure to neighborhood poverty during adulthood, and may extend to the next generation (Sharkey, 2008).

A small body of research links children's history of exposure to neighborhood poverty and affluence with their developmental outcomes. Three general hypotheses arise from this literature; however, they are not always explicitly tested. The first hypothesis, and perhaps least developmental in nature, is that children's cumulative experiences over the first two decades of life may be more important than exposure during a particular developmental period. Several studies based on the PSID demonstrate the power of cumulative measures of SES compared with single point in time estimates. For example, cumulative exposure to neighborhood poverty since birth was more strongly associated with non-marital fertility in young adulthood than a single point in time estimate at 14 years of age (South & Crowder, 2010), and a similar pattern was found for adolescents' odds of high school graduation (Crowder & South, 2011). The effect sizes for cumulative measures were on the order of 25% larger than point in time estimates. It is important to note that these studies only compared cumulative measures of neighborhood SES with those in adolescence (i.e., 14 years).

A second hypothesis that may be conceptually inherent in the studies just described—despite the nature of their findings—is that adolescence is a period of particular sensitivity to neighborhood influences because parents grant their older children greater autonomy, resulting in more exposure to extrafamilial contexts such as neighborhoods than in earlier childhood (Leventhal et al., 2009; see also Steinberg & Morris, 2001). In contrast to this hypothesis, a third hypothesis grows out of the work on family income and poverty which indicates that family economic resources during early childhood, as opposed to other developmental periods, are most salient for adult

achievement (Duncan, Ziol-Guest, & Kalil, 2010); early economic deprivation may lead to impaired functioning, which sets the stage for continued problems into adolescence and beyond (Shonkoff, Boyce, & McEwen, 2009). Thus, like family income, neighborhood SES may be most critical during early childhood too (Sampson, Sharkey, & Raudenbush, 2008). Studies addressing these two hypotheses generally take a more developmental approach than those studies testing the first hypothesis because they consider how exposure at different points in the life course may be linked to children's later functioning.

Although the research base is modest and results are mixed, there is some support for the early childhood hypothesis. For example, a study using nationally representative data indicates that exposure to neighborhood low SES in childhood, compared with exposure in adolescence or early adulthood, had the largest associations with mental health in early adulthood (Wheaton & Clarke, 2003; see also Anderson, Leventhal, & Dupéré, 2014). Other studies have incorporated longitudinal measures of children's outcomes in addition to neighborhood SES to address this issue. For instance, an investigation with a diverse U.S. sample reported that neighborhood high SES in early childhood was associated with children's reading achievement in first grade, but not with subsequent learning rates into adolescence (Dupéré et al., 2010).

A final set of studies that is somewhat distinct from the ones just described, but that takes a developmental perspective, focuses on changes in neighborhood conditions and their implications for children's development. Interest in this topic was fueled, in part, by questions about the effect of gentrification—or reductions in socioeconomic disadvantage—on children. The minimal work on this topic has employed various analytic methods to address the selection issues inherent in studying mobility out of changing neighborhoods. One such study based on the PSID reported that African American youth who lived in neighborhoods with declining concentrated disadvantage benefitted with respect to their adult economic attainment (Sharkey, 2012). However, another study employing PHDCN data found that boys', but not girls', trajectories of internalizing and delinquent behaviors were worse if they lived in neighborhoods that decreased *or* increased in poverty compared with their peers in stable neighborhoods (Leventhal & Brooks-Gunn, 2011). Together, these longitudinal studies taking a broader approach suggest that current estimates of neighborhood SES effects—drawn largely from single point in time estimates—likely underestimate the role of neighborhood SES in children's development.

In addition, the work of others reveals that it may take several years for neighborhood SES effects to even take hold (Sampson et al., 2008; Turley, 2003), but the timing, duration and nature of these experiences are likely to matter for children's development.

### *Experimental Approaches to Neighborhood SES*

In line with the longitudinal nonexperimental research just discussed are the experimental and quasi-experimental studies on neighborhood SES and children's development, which view neighborhoods as dynamic rather than static. As important, they further address concerns about selection bias in this field. As described earlier, most of this work grows out of housing programs for low-income, often minority, families receiving housing assistance or who volunteered to participate in mobility programs, and thus is restricted to this population (see the section "Experimental and Quasi-Experimental Approaches"). In addition, the study of neighborhood SES in this context is typically confounded with residential mobility. Again, the results of these studies are widely reported (e.g., Leventhal et al., 2009), and we only briefly summarize them here.

Among the oldest of these studies is a follow-up of the Gautreaux Program. A study following about 350 families who relocated under this program found that, 10 years after relocating, poor youth who moved to private housing in affluent suburban neighborhoods were less likely to drop out of high school and more likely to enroll in college preparatory classes and attend college than youth who moved to private housing in poor urban neighborhoods (Rubinowitz & Rosenbaum, 2000). Work following a larger sample of Gautreaux families through administrative data sources reports that, 15 years later, youth who moved to the suburbs had established their own households in less poor and segregated neighborhoods than their peers who stayed in the city (Keels, Duncan, Deluca, Mendenhall, & Rosenbaum, 2005). The long-term impacts on educational and economic attainment, however, are unknown, particularly for the larger, more representative sample.

Building on the promising early results of Gautreaux, MTO is the most recent, well-known, and only true experimental study of neighborhood mobility. A 10-year evaluation of MTO revealed that adolescent boys, but not girls, who moved to low-poverty neighborhoods reported worse mental health than their peers who remained in public housing in high-poverty neighborhoods and that some benefits were seen for girls (Kessler et al., 2014). Generally, no program effects on youth education, crime, or physical health were reported (Gennetian et al., 2012).



Finally, another court-ordered desegregation effort in Yonkers, New York, in 1985 entailed the construction of 200 units of low-rise publicly funded townhouses in eight primarily White middle-class areas of the city. A quasi-experimental study followed approximately 220 low-income, minority families 7 years after relocating. Unlike the Gautreaux, it found uniformly unfavorable outcomes in both the schooling and behavioral domains for youth who moved to the new housing compared with their peers from the old neighborhood, about half of whom had families who were on the waitlist for the new public housing (Fauth, Leventhal, & Brooks-Gunn, 2007).

Given the rather consistent pattern in the nonexperimental literature regarding links between neighborhood SES and children's development, these mixed results from mobility programs have been rather puzzling. A number of factors may contribute to the mixed results, but the underlying reasons likely vary somewhat across the programs. To begin, moving likely disrupted children's existing social networks, which could have offset any benefits associated with more advantaged neighborhoods (see also the section further on in the chapter, "Synergies Between Neighborhood and Peer Contexts"). For example, qualitative work on MTO suggests that boys' access to fathers and father figures was curtailed by moving, which might account for the unfavorable program effects seen for them (Clampet-Lundquist, Edin, Kling, & Duncan, 2011). In addition, boys in MTO were more likely than girls to return to their old neighborhoods to access social networks. Both factors might have mitigated the benefits of lower poverty neighborhoods for boys.

At the same time, income and/or racial/ethnic differences between mover youth and their new neighbors may have been another challenge. These differences may have precluded the formation of close ties, subjected movers to experiences of racism and discrimination, and engendered resentment. For instance, families who moved to less poor neighborhoods were more likely to report experiences of discrimination in Gautreaux and less informal socializing with neighbors in Yonkers, at least in the short-term, than their respective counterparts in higher poverty neighborhoods (Fauth, Leventhal, & Brooks-Gunn, 2004; Rubinowitz & Rosenbaum, 2000).

Another factor explaining the mixed results involves schools. If school quality was not improved by moving, educational benefits were unlikely to accrue (see also the section "Synergies Between Neighborhood and School Contexts"). For example, in Yonkers, children remained in the same city and school district. In MTO, the situation was

more complicated. Families who moved to low-poverty neighborhoods remained in urban areas and in predominately racial and ethnic minority neighborhoods (i.e., did not move to the more affluent suburbs like in Gautreaux). As such, children often remained in the same urban school districts as prior to the move, and many even attended the same schools because of school choice policies allowing them to do so (see Sanbonmatsu, Kling, Duncan, & Brooks-Gunn, 2006).

Finally, we should note that, in all of the programs, families remained poor despite their improved neighborhood conditions. Many economic, social, and personal challenges that children and their families faced—beyond neighborhood poverty and related conditions such as safety—likely remained in place after they moved and may have been heightened or made more salient with the move to a more advantaged neighborhood. These mixed results are perhaps not surprising given that mobility programs do not directly target child outcomes and given that neighborhood socioeconomic composition influences children's development largely indirectly, a topic we turn to in the remainder of this section.

### **Neighborhood Processes Linking Neighborhood Structure and Children's Development**

This section highlights potential pathways for explaining observed links between neighborhood structure, notably SES, and children's development reviewed in the previous section. We focus on two central vehicles, institutional resources and social processes.

#### ***Institutional Resources***

One major pathway through which neighborhood socioeconomic characteristics might influence children's development is the quality of local institutional resources (Leventhal & Brooks-Gunn, 2000; Sampson et al., 2002). Children spend a large share of their waking hours in neighborhood institutions that reflect local realities. Child-care centers, preschools, and schools are examples of such local institutions at the core of children's daily routines (see Burchinal, Magnuson, Powell & Soliday Hong, Chapter 6, this *Handbook*, this volume, Crosnoe & Benner, Chapter 7, this *Handbook*, this volume).

This section discusses how the neighborhood context may shape these local institutional resources. Other resources, such as afterschool programs (see Vandell, Larson, Mahoney & Watts, Chapter 8, this *Handbook*, this volume) and health care (see Zuckerman & Keder,

Chapter 15, this *Handbook*, this volume), are also relevant, but fall beyond the scope of this chapter (for a discussion of a wider set of local institutional resources, see Leventhal et al., 2009).

The children attending local child care centers, preschools, and schools typically come from families who mirror the neighborhoods in which they are embedded. Most children attend their neighborhood's school, and even those who participate in school choice programs usually attend nearby schools within their own school districts (Ryan, 2010). In terms of young children's early care and education, for whom no corresponding districting constrains choice (in most cases), a convenient location close to home often is cited by parents as a leading reason underlying the selection of care (e.g., Raikes, Torquati, Wang, & Shjegstad, 2012). As such, childcare centers, preschools, and schools located in disadvantaged neighborhoods will mostly serve disadvantaged families, and vice versa. Given increasing neighborhood inequality in the United States, many local institutions, beyond educational settings, are likely to be composed uniformly of either disadvantaged or affluent participants (as opposed to average), limiting the types of institutions available to families in their neighborhoods (Reardon & Bischoff, 2011).

A sizeable body of research reveals that a higher concentration of disadvantaged children within institutions is independently associated with adverse developmental outcomes beyond children's own family disadvantage (e.g., Levine & Painter, 2008). This pattern may arise because teachers and child care providers serving disadvantaged populations typically have to manage comparatively large proportions of children with learning, emotional, and/or behavioral problems (Dinkes, Forrest Cataldi, & Lin-Kelly, 2007). Such a context makes it challenging to create a learning environment that supports high-quality instructional activities.

Neighborhood composition determines not only who attends a certain care or educational setting, it also influences who works there. Institutions located in affluent neighborhoods often have more financial resources because institutions such as public schools are largely funded by local tax revenues based on property values and business activities, both of which increase with neighborhood SES. In addition, affluent parents can and do invest more financial resources in their children's education than more disadvantaged parents (Conger, Conger, & Martin, 2010). Thus, institutions located in affluent areas can tap these pooled resources to finance both infrastructure development and competitive salaries for teachers. These resources allow institutions in affluent neighborhoods to hire and

retain more qualified and effective teachers, as compared with those with large enrollments of poor (often minority) students, which are disproportionately represented in urban areas (Guarino, Santibañez, & Daley, 2006). These institutional dynamics may be moderated by the broader policy context: In contrast to the United States, countries such as Sweden and Canada have policies to allocate more resources to schools in disadvantaged than affluent areas (Andersson & Musterd, 2005; Oreopoulos, 2008).

High-quality child care in the United States is more accessible in advantaged than disadvantaged neighborhoods, despite the presence of high-quality publicly funded programs in poor neighborhoods (e.g., Burchinal et al., 2008; see also Burchinal et al., Chapter 6, this *Handbook*, this volume). A study using national data reflects the lack of quality options available to low-income families, even when they receive subsidies to assist with the cost of care in the private market (A. D. Johnson, Martin, & Brooks-Gunn, 2013). The relative scarcity of high quality care in disadvantaged neighborhoods is problematic, given that the benefits associated with it may be greatest among disadvantaged children (e.g., Tucker-Drob, 2012).

Likewise, the quality of schools is tied to neighborhood SES (Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). Affluent, highly educated parents typically expect educational services of high quality for their children, and they exert pressure on their local institutions to get them (Lareau, 2003). For instance, the level of parent participation in school-related activities, such as parent-teacher associations (PTAs), is higher in advantaged than disadvantaged neighborhoods (e.g., Greenman, Bodovski, & Reed, 2011), thus raising the level of connections and social capital among parents. Increased connectivity and social capital also has other ramifications such as supporting the flow of information about whom the good teachers, tutors, coaches, and so on, are and where they are located. Such exchange of information is likely to support the growth and preservation of well-functioning services, which benefits all neighborhood children.

Some empirical evidence supports the premise that the quality of local institutions is key for understanding why children from comparatively advantaged neighborhoods tend to have more favorable outcomes than their peers from less advantaged ones. For instance, a natural experiment in which Ethiopian immigrants were relocated in a quasi-random fashion throughout Israeli communities revealed that the quality of local primary schools was associated with student's long-term educational success (Gould et al., 2004). A nonexperimental study found that

the observed quality of child care and school advantage partially explained the link between neighborhood affluence and children's achievement (Dupéré et al., 2010). Studies of youth behavioral outcomes also report that the quality of local educational institutions matters (e.g., Eitle & McNulty Eitle, 2004). In short, the composition and quality of early care and educational institutional settings serving children is central for their development and appears to be a function of neighborhood socioeconomic composition.

### *Social Processes*

Another means through which neighborhood structural characteristics may influence children's development is neighborhood social processes. As described earlier, neighborhood social processes include collective efficacy, physical and social disorder, exposure to violence and safety, and the extent of social networks. Although all of these processes are linked to children's development (Leventhal & Brooks-Gunn, 2000), we focus here on the large bodies of research on collective efficacy and the overlap of social disorder and exposure to violence as pathways that are especially informative for understanding how neighborhoods matter for children's development.

As with neighborhood institutional resources, social processes may help to explain *how* neighborhood structural characteristics, notably poverty and affluence, influence children's outcomes. Whereas institutional resources are probably most informative for understanding children's achievement-related outcomes, and to some extent their opportunities to avoid the problematic behavioral outcomes associated with unstructured time (Gottfredson, Gottfredson, & Weisman, 2001), neighborhood social processes may be more useful for addressing neighborhood influences on children's behavior outside of structured settings. Theoretically, we expect that neighborhoods high in collective efficacy limit children's opportunities to engage in deviant behaviors, in contrast to neighborhoods high in crime and disorder that offer more opportunities to engage in such behaviors.

**Collective Efficacy.** Collective efficacy is embedded in the larger neighborhood context and can be understood as an engine for community action and organization, operating through formal and informal community institutions, and stemming from neighborhood structural characteristics, including low SES, racial/ethnic diversity, residential instability, and single parenthood (Sampson et al., 1997). An important distinction is that collective

efficacy is broader and more diffuse than neighborhood social networks; collective efficacy does not require strong ties or associations within neighborhoods (Sampson, 2003). Rather, it is trust among neighbors that there are shared norms and expectations for behavior and a collective willingness to enforce such norms, even in the absence of close personal ties. Empirical studies focusing on collective efficacy specifically related to community exchange on issues relevant for children indicate that it is highest in neighborhoods of concentrated affluence and low residential mobility (Sampson, Morenoff, & Earls, 1999).

Growing research has taken collective efficacy from its initial roots in criminology and urban sociology to demonstrate its relevance for developmental science. The bulk of this research focuses on links between low collective efficacy and problematic and risky adolescent behaviors (e.g., Browning, Leventhal, & Brooks-Gunn, 2005), but other work reveals the importance of collective efficacy during early childhood, and for a range of outcomes such as verbal ability and mental and physical health (e.g., Kohen et al., 2002; Xue, Leventhal, Brooks-Gunn, & Earls, 2005). The range of outcomes associated with neighborhood collective efficacy in early childhood suggest there are likely many pathways by which the neighborhood social context comes to matter for young children, which are given greater attention in subsequent sections on cross-context and person-context interactions. Moreover, these multiple pathways are likely to be part of broader developmental trajectories that have some continuity across development and contribute to the associations observed between neighborhood collective efficacy and adolescent outcomes.

The focus on adolescents in this literature stems largely from the argument that with greater autonomy than younger children, teenagers are more likely to have direct exposure to neighborhood social conditions (Leventhal et al., 2009). This relatively rich body of research enables us to focus this section of the review on only methodologically strong studies. Greater collective efficacy, particularly community social control, is associated with adolescents' fewer externalizing (delinquency and violence, affiliation with deviant peers, and carrying a concealed weapon) and internalizing (depressive symptoms) behaviors (e.g., Dupéré, Leventhal, & Vitaro, 2012; Roosa et al., 2010; Sampson et al., 2005). Neighborhood social cohesion and collective efficacy also are associated with adolescents' body mass index and frequency of physical activity (e.g., Cohen, Finch, Bower, & Sastry, 2006; Utter, Denny, Robinson, Ameratunga, & Milfont, 2011). Further, collective efficacy is associated

with more private adolescent behaviors including sexual debut and number of sexual partners (e.g., Browning, Burrington, Leventhal, & Brooks-Gunn, 2008; Browning, Leventhal, & Brooks-Gunn, 2004).

Conversely, greater neighborhood informal social control is linked to favorable adolescent outcomes, including prosocial competence and conventional friends (Elliott et al., 1996). As with results from studies with younger children, findings with adolescents suggest that collective efficacy may at least partially explain the connection between developmental outcomes and neighborhood low SES. Overall, strong theoretical and empirical support exists for the link between neighborhood collective efficacy and adolescent outcomes.

Again, given the breadth of young child and adolescent outcomes associated with collective efficacy and its components (social control and social cohesion), understanding when and for whom this feature of neighborhoods matters most is an important direction for developmental scientists. Individual, family, and neighborhood-level factors are all likely to be relevant, including other social processes, such as exposure to violence and social disorder in the neighborhood.

**Exposure to Violence and Social Disorder.** Higher collective efficacy is associated with lower rates of neighborhood violence, both concurrently and over time, and even partially explains the association between neighborhood concentrated disadvantage and crime (Sampson, 2003; Sampson et al., 1997). Although collective efficacy may contribute to the link between structural disadvantage and violence and disorder, exposure to violence and social disorder, in particular, have independent relations with children's development beyond that of low social control and a lack of neighborhood cohesion (e.g., Roche, Ensminger, & Cherlin, 2007). We examine exposure to violence and social disorder together in this section because both are related to criminal activity, are likely to co-occur, and are often considered in tandem.

Exposure to violence is typically assessed at the individual level. Individuals' perceptions of danger and violence may have profound implications for their social and emotional functioning beyond more objective rates of community crime and violence (Cammack, Lambert, & Ialongo, 2011). It is important to acknowledge, however, that individual reports may reflect individual biases as well as objective neighborhood conditions and are methodologically problematic for this reason.

Results from experimental evaluations of housing programs offer insight into the role of parents' perceptions

and fears of community violence: Parents applying for two such programs reported that getting away from drugs and gangs was their primary motivation for wanting to move away from public housing in high-poverty neighborhoods (Briggs, 1997; Goering & Feins, 2003). Initial and longer-term follow-ups of these programs found that children who moved to more advantaged neighborhoods were less likely to be exposed to violence and danger than were peers who remained in poor neighborhoods (Fauth et al., 2007; Kling, Liebman, & Katz, 2007; Popkin, Leventhal, & Weismann, 2010). These results, again, point to the importance of considering neighborhood socioeconomic conditions simultaneously with neighborhood social processes, as well as the importance of parents' perceptions of the ways in which they select neighborhoods.

Across development, neighborhood safety is linked to children's overall physical health (Fan & Chen, 2012). This association begins with lower birth weights among babies born to mothers residing in neighborhoods with high levels of violent crime (Morenoff, 2003) and persists throughout childhood. Parents may be less likely to allow their children to spend time outside in neighborhoods that are less safe, restricting their options for out-of-school-time physical activity (Schreier & Chen, 2012). In fact, parents' perceptions of neighborhood safety and social disorder are associated with the amount of time children engage in physical activity and are associated with their risk of obesity (Bacha et al., 2010; Molnar et al., 2004).

As with collective efficacy, theory implies that exposure to violence and social disorder are likely to have the largest links with adolescents' behavior as youth gain independence and develop strategies to navigate their neighborhoods. Studies examining how community violence and social disorder are associated with young children's outcomes are sparse. However, disorder and crime assessed using systematic social observations and by official crime records, respectively, were adversely associated with preschool children's intellectual development (Caughy, Hayslett-McCall, & O'Campo, 2007; Kohen et al., 2002). Another neighborhood-level study found an association between residents' fear of victimization in their neighborhoods and young children's internalizing symptoms (Caughy, O'Campo, & Muntaner, 2004). These divergent findings may be related to the different neighborhood features assessed: Objective and visible disorder versus neighborhood residents' fear. The former may influence availability of and access to early education opportunities, whereas the latter may be more reflective of parents' behaviors, thereby showing stronger connections



with young children's achievement and psychological outcomes, respectively.

Among older children and adolescents, evidence more clearly points to a link between neighborhood disorder and violence and behavioral outcomes specifically. Overall, youth who are exposed to greater community violence and disorder have lower self-efficacy, more externalizing problems, earlier age of sexual debut, display more anti-social behavior and severe behavior problems, and are more likely to commit acts of violence themselves than peers who are exposed to less violence (Cummings et al., 2011; Dupéré et al., 2012; Gonzales et al., 2011; Singh & Ghandour, 2012). Neighborhood danger may account for links between neighborhood low SES and adolescent outcomes, including emotional problems and timing of first intercourse (e.g., Pettit, Bates, Dodge, & Meece, 1999; Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999). In addition, a body of qualitative research suggests that social disorder and exposure to violence may be particularly relevant for girls' sexual initiation, in part due to coercive sexual environments in high poverty neighborhoods (Popkin et al., 2010) and individual fears of death (Choby, Dolcini, Catania, Boyer, & Harper, 2012). In sum, growing evidence points to the salience of neighborhood disorder and violence as key social processes that comprise children's development.

### Cross-Context Interactions

As discussed, developmental science has long acknowledged that successful and healthy child development requires interactions between an active individual and his or her environment (Elder et al., Chapter 2, this *Handbook*, this volume; Lerner, 2006; Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1). This environment is composed of a complex web of embedded and overlapping contexts with the potential to shape and influence individual trajectories. These overlapping contexts are likely to exert joint influences, mitigating, exacerbating, supporting, nullifying, or counterbalancing one another. Such cross-context interactions occupy a central place in relational developmental systems theories (e.g., Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1) because they help to fully make sense of human development's successes and failures. This section looks at such cross-context interactions between the neighborhood and the family, peer, and school contexts.

### *Synergies Between Neighborhood and Family Contexts*

To at least some degree, families select and shape the neighborhoods in which they live. In addition, children are not alone in how they are influenced by neighborhood structural and social features: Parents also experience and adapt to their neighborhood contexts. Thus, in addition to direct links between neighborhoods and child outcomes, there are multiple ways in which parent and family characteristics are likely to intersect with neighborhood features relevant for children. Accordingly, this section is divided into two parts: First, the ways in which neighborhoods might shape parenting are considered, and second, the potential for parenting to matter differently in different neighborhood contexts is examined.

**Neighborhoods Shaping Parenting.** Consistent with findings that neighborhoods matter for children, research also shows that neighborhood characteristics matter for adults in general, and parents in particular (e.g., Franco, Pottick, & Huang, 2010; Guterman, Lee, Taylor, & Rathouz, 2009; see also Bornstein, Chapter 3, this *Handbook*, this volume). Notably, links between neighborhood features and adult psychological well-being suggest that parents in more disadvantaged neighborhoods may experience greater depression, more stress, and worse physical health—all of which are associated with less warm and consistent parenting behaviors (Conger & Donnellan, 2007; Elder, Eccles, Ardelet, & Lord, 1995). In addition, it is likely that parents who are more overwhelmed and stressed by their neighborhood contexts may be less adept at shielding their children from the negative aspects of their neighborhoods. In this way, parenting may act as an indirect pathway for the effects of neighborhoods on children, and also a contributing factor in children's direct experiences of their neighborhoods.

Experimental evidence from MTO indicates that parents who moved from high poverty to low poverty neighborhoods experienced psychological and physical health benefits, including lower rates of diabetes and extreme obesity, compared with parents who stayed in high poverty neighborhoods (Ludwig et al., 2011, 2012). Nonexperimental research partially supports links between neighborhood socioeconomic disadvantage and parents' greater depressive symptoms, lower overall parenting quality, and higher family stress and conflict (Conger & Donnellan, 2007; Paschall & Hubbard, 1998). However, some work, including quasi-experimental studies,

reveals that neighborhood SES associations with parenting may be more complex, such that greater neighborhood affluence may be associated with parents' lower social support and higher alcohol use (e.g., Briggs, 1997; Chuang, Ennett, Bauman, & Foshee, 2005; Fauth, Leventhal, & Brooks-Gunn, 2008).

In terms of specific parenting behaviors, findings from the Yonkers Project suggest that compared with families who stayed in low-income neighborhoods, parents who moved to middle-class neighborhoods used less stringent monitoring with their children, and less restrictive control and discipline because they were "not struggling to isolate their kids from neighborhood risks" (Briggs, 1998, p. 208). In contrast, in the New York MTO sample, compared with parents who remained in high poverty neighborhoods, parents who moved to low poverty neighborhoods were observed to use harsher parenting with girls, and no differences emerged between the groups in terms of parents' monitoring practices or family routines (Leventhal & Brooks-Gunn, 2005). The authors suggest this counterintuitive finding related to harsh parenting may be related to the short-term strain of moving, with increasing conflict between girls and their parents as a normative component of adolescence; however, it remains unclear whether these experimental findings persist over time.

Net of neighborhood SES, neighborhood social processes also are associated with parents' well-being and parenting behaviors. Consistent with findings that affluent neighborhoods may not always optimize parent well-being, associations with neighborhood social processes and parenting are nuanced and potentially moderated by neighborhood structure, notably SES. For example, lower neighborhood social cohesion is associated with greater parental depression (Kohen, Leventhal, Dahinten, & McIntosh, 2008), but higher neighborhood informal social control may exacerbate the negative association between parenting strain and parents' feelings of personal control (Carpiano & Kimbro, 2012).

More general measures of neighborhood quality also may be linked to parents' well-being, but a majority of this work has not used methodologically rigorous assessments of neighborhood social processes. Not surprisingly, reports of parenting stress are higher and ratings of general psychological and physical well-being are lower in neighborhoods that parents rate more negatively (e.g., more signs of social disorder and lower perceptions of safety; Franco et al., 2010; Guterma et al., 2009). Although

parents' perceptions of their neighborhoods may affect their parenting behaviors (Rankin & Quane, 2002), it is important to consider whether parents' negative neighborhood perceptions reflect neighborhood conditions per se, or whether negative neighborhood perceptions are simply a marker for a more general constellation of family stress, disadvantage, and/or poor functioning.

The associations between neighborhood context and parental well-being and parenting behaviors are likely to matter for children's development. Robust assessment of these types of mediated pathways typically comes from longitudinal data, which allows temporal sequencing of the proposed pathways to reduce the confounding influence of bidirectional effects. Such studies reveal that diverse parenting behaviors (i.e., parental warmth and monitoring, consistent discipline, and provision of home learning opportunities) help explain links between neighborhood SES and children's behavioral and achievement outcomes (Dupéré et al., 2010; Kohen et al., 2008; Odgers, Caspi, Russell, et al., 2012).

Cross-sectional studies also provide support for parenting as a link between neighborhood SES and children's outcomes (e.g., Chuang et al., 2005; Simons, Johnson, Beaman, Conger, & Whitbeck, 1996), but work examining mediated pathways with other aspects of neighborhoods, aside from SES, is relatively scarce. Some research suggests that parenting behaviors may mediate the links between both neighborhood social cohesion (Kohen et al., 2008) and neighborhood disorder (Mrug & Windle, 2009) and children's outcomes. These studies highlight the potential for different neighborhood and parenting features to predict different outcomes for children, as well as the possibility that different neighborhood social processes may be more or less salient for parents, perhaps depending on children's developmental status. For example, neighborhood social cohesion may be more important for parents when their children are young because of the parenting demands, but parents may become more focused on neighborhood disorder as their children age and have greater direct exposure to neighborhoods.

### **Neighborhoods Shaping How Parenting Matters.**

In addition to considering parenting as a potential pathway between neighborhood features and children's outcomes, the next models propose that parenting may simply matter differently in different contexts. That is, parenting and neighborhoods may interact to influence children's

development differently based on the specific combinations of parenting and neighborhood attributes. These models are informed by a risk and resilience perspective (Cicchetti, 2010; Werner, 1995), with both neighborhood and parenting features garnering consideration as risk and protective factors. Most similar to traditional risk and resilience models, the buffering model frames neighborhood context as a risk factor and parenting as a protective factor (Simons et al., 2002). Support for this hypothesis is most abundant in samples of African American and Latin American youth, and suggests parental warmth, monitoring, and engagement in school activities can all act as buffers in the context of neighborhood low SES and high crime and disorder (e.g., Dearing, 2004; Rankin & Quane, 2002; Roche & Leventhal, 2009).

Whereas the buffering model frames parenting as a moderator of the link between neighborhood and child outcomes, the neighborhood context also can be considered a moderator of the link between parenting and child outcomes. In this formulation, parenting and neighborhood context are at odds: One serves a protective role for child development and the other poses risk. That is, neighborhood disadvantage may overwhelm any advantages of typically beneficial parenting behaviors so that parenting effects “evaporate” in high-risk neighborhoods (Simons et al., 2002); or, ineffective parenting behaviors (e.g., low monitoring) might not be as problematic in the context of supportive neighborhoods (e.g., high collective efficacy; Browning et al., 2005).

A complementary hypothesis is that parenting behaviors and neighborhood characteristics work in the same direction, resulting in amplification, for better or for worse. That is, negative, ineffective, or uninvolved parenting strategies may confer greater threats to children’s development in the context of high-risk neighborhoods (Roche et al., 2007). Lower monitoring and permissive parenting were found to be particularly detrimental for children’s behavior in neighborhoods rated as less safe, as well as in neighborhoods with greater residential instability and disorder (Beyers, Bates, Pettit, & Dodge, 2003). Similarly, in more disadvantaged neighborhoods, harsh and inconsistent parental discipline practices are more strongly associated with children’s symptoms of conduct disorder (Brody et al., 2003). On the other hand, parenting strengths (e.g., use of authoritative control strategies) may be even more beneficial for children’s outcomes in neighborhoods where authoritative parenting is the norm or where collective efficacy is high (Fletcher, Darling, Dornbusch, & Steinberg, 1995; Simons, Simons, Burt, Brody, & Cutrona, 2005).

Yet another possibility is that a “goodness-of-fit” between parenting practices and neighborhood characteristics may make some parenting behaviors differentially successful across diverse neighborhoods. This match between neighborhood features and parenting behaviors may depend upon parents’ or children’s individual characteristics, particularly race and ethnicity (e.g., Carpiano & Kimbro, 2012; Dearing, 2004). Research supporting the goodness-of-fit model suggests that more restrictive parenting can be protective, or at least not harmful, in disadvantaged neighborhood contexts. For example, high parental authoritarian control was associated with adolescents’ delayed sexual initiation in low SES neighborhoods, but in high SES neighborhoods this parenting approach was associated with earlier sexual initiation (Roche et al., 2005). Punitive parenting, on the other hand, seems most detrimental for children’s behavior in the context of disadvantaged neighborhoods (Roche et al., 2007; Roche, Ghazarian, Little, & Leventhal, 2011), but restrictive parenting in these neighborhood contexts is associated with favorable academic outcomes (Dearing, 2004). These quantitative findings are consistent with a body of qualitative work that suggests greater parental control may be protective for minority youth in high-risk settings (e.g., Jarrett & Jefferson, 2003).

In sum, family processes and parenting behaviors clearly have multiple roles and meanings in diverse neighborhood contexts. To date, theoretical explanations for specific pathways and directions of associations across the neighborhood and family contexts are weak, and methodologically rigorous studies (e.g., using longitudinal family data in conjunction with independent assessments of neighborhood features) continue to be the exception. Nonetheless, the breadth of existing research highlights the complexities inherent in understanding how different levels of context interact to affect individual children. To further complicate the matter, parents also influence children’s neighborhood peer groups, and their school experiences; interactions between these contexts and neighborhoods are considered next.

### *Synergies Between Neighborhood and Peer Contexts*

Developing positive and meaningful peer relationships is thought to be a vital part of healthy development, perhaps especially so during adolescence, when the larger social world beyond the family is needed to meet the psychosocial needs of adolescents, notably identity formation and autonomy (e.g., Brown & Larson, 2009; see also Rubin, Bukowski, & Bowker, Chapter 5, this *Handbook*,

this volume). The neighborhood context provides a social space for interactions outside of the family, and thus converges with the peer context. After all, a large portion of children's friends comes from their neighborhoods (e.g., Dolcini, Harper, Watson, Catania, & Ellen, 2005). As friends play an important role in development (e.g., Rubin et al., Chapter 5, this *Handbook*, this volume), peer relations represent a major pathway through which neighborhoods could influence children and adolescents. There are at least three different ways in which the neighborhood context could shape the peer context: (1) determining the pool of potential friends; (2) shaping the larger normative context; and (3) constraining unstructured peer group activities through collective resources. We discuss each in turn with a focus on adolescence because of the central role peers play during this period of development and because of the dearth of research on childhood.

**Neighborhoods as Determinants of the Pool of Potential Friends.** The most obvious and direct way in which neighborhoods might influence the peer context and in turn children's development is by determining the pool of available peers with whom one can form friendships. A long research tradition in social psychology shows that mere physical proximity to someone, notably living nearby, increases the likelihood of friendship formation (e.g., Back, Schmukle, & Engloff, 2008). Moreover, availability may influence who children spend their free time with even more so than similarity (Siennick & Osgood, 2012). These proximity effects suggest that children's social worlds are at least in part bounded by their neighborhoods, as they typically spend their structured time in neighborhood institutions (e.g., preschools/schools or after school programs), or unstructured time in their neighborhoods (e.g., playing in parks or hanging out in the streets).

Nonexperimental research reveals that youth living in disadvantaged neighborhoods are more likely to have deviant friends than their peers in more advantaged communities, even after taking into account individual and family background characteristics (e.g., Brody et al., 2001). This increased tendency to affiliate with problematic peers partly explains why youth in disadvantaged neighborhoods are at an increased risk for various unfavorable developmental outcomes such as delinquency and risky sexual behaviors (e.g., Chung & Steinberg, 2006; Dupéré, Lacourse, Willms, Leventhal, & Tremblay, 2008).

Findings from a study using a natural experiment reveal how the neighborhood context influences one's immediate peer group and, in turn, behavior (Kirk, 2009). As

described earlier, this study took advantage of changes in offenders' residential location after release from prison in the aftermath of Hurricane Katrina and found that not returning to one's former place of residence was associated with inmates' reduced chances of recidivism and re-incarceration because it likely disrupted deviant peer networks. In a somewhat similar vein, qualitative research suggests that some of the disappointing findings following mobility in the context of the MTO program arose because young males in the program were not effectively separated from their peers in their old neighborhood because of the proximity of their new neighborhoods to their original ones (Clampet-Lundquist, 2011). In addition, nonexperimental work with PHDCN found that mobility within or outside the city of Chicago had differential implications for youth experiences and outcomes, presumably in part because of connections to peers (Dupéré et al., 2012; Sharkey & Sampson, 2010). Clearly, more research is needed to sort out the processes underlying the effect of different kinds of mobility and its associations with the maintenance of peer relationships in the context of neighborhood research.

**Neighborhoods Shaping the Larger Normative Context.** The neighborhood context has the potential to influence the characteristics of children's close friends, but more generally, it also can shape the larger peer normative context to which they are exposed. Even without cultivating intimate relationships with neighborhood peers, children are likely aware of consequential events of those who share the same general neighborhood-based social milieu. For example, news of conspicuous events such as going to college or having a baby can spread widely in loose networks through hearsay, well beyond one's immediate network of close friends (e.g., Tyler, 1980). Through such channels, children perceive the setbacks and successes inflecting the pathways of other neighborhood youth. To describe the potential role of this larger normative context, two general models are proposed.

The first general model is based on the premise that children's behavior will be affected by their larger normative context in a manner that mirrors behaviors and attitudes that are common around them. This approach incorporates epidemic models (Crane, 1991; Jencks & Mayer, 1990), which propose that negative outcomes such as school dropout or teenage childbearing are "contagious," in the sense that they propagate through contacts with peers exhibiting problematic behaviors and who are thus "infected." The model stipulates, for instance, that when a behavior reaches a critical threshold, it spreads like



an epidemic, but remains under control when this critical threshold is not attained. As disadvantaged neighborhoods are composed of more individuals at risk of developing a behavioral “sickness” due to their individual and family circumstances, “outbreaks” are more likely in these contexts.

The spread also could be complicated by the fact that fewer individuals are “inoculated” with protective factors. Harding’s (2009, 2011) model of cultural heterogeneity can be included under this approach as well. This model suggests that disadvantaged neighborhoods are far from monolithic cultural entities. Rather, it proposes that children living in such neighborhoods are exposed to a wide range of cultural scripts, mostly mainstream ones, but also to many unconventional variants, such that youth in disadvantaged neighborhoods have a wider set of models to choose from than their peers in more advantaged neighborhoods, creating confusion and opening the way for suboptimal or deviant choices. The epidemic and heterogeneity models stress different processes, but they both propose that behaviors and attitudes spread and reproduce themselves within a neighborhood, so that the proximity of peers engaging in problematic behaviors increases the chances that other youth from the same community will do the same, and vice versa. Empirical support for these models comes from studies showing that unfavorable outcomes such as low achievement and risky sexual behaviors are more likely for youth when they are surrounded by low achieving or risk-taking peers in their neighborhoods than when they are not (e.g., Harding, 2009, 2011).

The second general model proposes that peers influence youth’s motivation and behavior through a comparative process of redefining one’s relative standing in the immediate social context (e.g., neighborhood). In the neighborhood literature, this process is generally known as “relative deprivation” (Jencks & Mayer, 1990) and is referred to as the “big fish little pond” or the “frog pond” effect in the education literature focusing on school effects (e.g., Crosnoe, 2009; see Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). For instance, the academic self-concept of a high-achieving youth may be higher if the youth lives in a neighborhood where the youth excels compared with neighborhood peers than if the youth performs the same but lives in an exclusive neighborhood comprised of other high achieving children who are exposed to strong pressures to distinguish themselves both in school and in other domains (Luthar & Barkin,

2012). Thus, according to this perspective, growing up in a relatively disadvantaged neighborhood may lead to comparatively positive outcomes in some domains such as achievement. Supporting this view, disadvantaged youth were more likely to feel inadequate when they were exposed to a relatively advantaged neighborhood contexts, as compared with their respective peers in more disadvantaged settings, and this experience had developmental consequences (e.g., Clampet-Lundquist et al., 2011). A particularly telling example comes from the evaluation of the Yonkers Project: Seven years after relocation, youth who moved to middle-class communities had similar scores on standardized tests to youth from comparable backgrounds who did not move (Fauth et al., 2007). Even though their achievement scores were indistinguishable, movers reported worse academic performance and lower school engagement as compared with stayers, consistent with the relative deprivation hypothesis.

These two families of models lead to contrasting hypotheses regarding the connection between the presence of disadvantaged peers in children’s neighborhoods and their developmental outcomes: The first set of normative models lead to the prediction of worse outcomes, whereas relative deprivation models anticipate better outcomes, in particular for struggling or disadvantaged children (e.g., Crosnoe, 2009). In fact, both could operate in parallel and somewhat cancel each other’s effect. For this reason, considering both simultaneously may be necessary to fully understand how the influence of the neighborhood context plays out. Recent efforts have tried to do just that in the school effects literature, with mixed results (see Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). One factor that complicates the picture is that the relative importance of these competing processes could depend on the specific outcome considered. In theory, the adverse effect of school or neighborhood disadvantage should be felt more acutely in terms of actual performance, whereas the beneficial effects stemming from social comparison should be most evident in perceptions of abilities and motivation (Crosnoe, 2009). This interpretation could help to explain the discrepant results of the Yonkers Project, where differences between those who moved to more advantaged neighborhoods were observed on self-perception outcomes but not on standardized-tests outcomes (Fauth et al., 2007). In short, the ways in which neighborhoods shape the larger normative peer context is likely to be complex and vary as a function of neighborhood, peer, and individual factors.

### ***Neighborhoods Constraining Youths' Unstructured Peer Group Activities***

The previous sections describe ways in which neighborhoods can shape the characteristics of peers who comprise children's social world, be it intimate friends or the backdrop of acquaintances who create the local normative ethos. A third way in which the neighborhood context can affect young people's peer relationships is not so much by influencing *who* is in their social worlds, but rather by defining *what* activities they can engage in with their peers. Indeed, some neighborhoods have less tolerance for youth's unstructured and disorderly activities than others, and more collective resources to curtail them (Sampson, 1997). In addition, some neighborhoods have comparatively more institutional resources than others, facilitating children's participation in structured activities that reduces time left for "hanging out" or loitering around in the neighborhood as described in the previous section (see also Vandell et al., Chapter 8, this *Handbook*, this volume). These neighborhood processes and resources help define the opportunity structure for youth's delinquent and risky behaviors, as these behaviors typically take place in the context of unsupervised, unstructured activities with peers (Osgood, Wilson, O'Malley, Bachman, & Johnston, 1996). Research supports the hypothesized linkages between the neighborhood context, time spent in unstructured, unsupervised activities with peers, and both youth delinquency and victimization (e.g., Maimon & Browning, 2010).

Thus, there are a number of ways in which the neighborhood context can shape children's peer context. Rather than operating in isolation, these components are likely to reinforce one another's influence on behavior. If we take delinquency, for instance, it is likely that youth in more disadvantaged neighborhoods will be exposed to more deviant individuals in their peer groups, and live in a larger context where delinquent activities are more frequent and where opportunities to spend time in unstructured, unsupervised activities with peers are greater. These conditions can reinforce one another leading to youth's enhanced risks of engaging in problematic behaviors. Along these lines, Maimon and Browning (2010) found that spending time in unstructured activities with peers was more strongly associated with violent behaviors among youth living in neighborhoods with fewer social resources. In the same manner, Pettit et al. (1999) found that adolescents who lived in a disadvantaged neighborhood context and who

had deviant peers were especially at risk, thus supporting the idea of cross-context interactions, in this case between the smaller world of the peer group and the broader context of the neighborhood.

### ***Synergies Between Neighborhood and School Contexts***

Concentrated neighborhood disadvantage has implications for schools as well, with schools in disadvantaged neighborhoods often facing numerous challenges that are thought to adversely affect learning and other developmental outcomes (see the earlier "Neighborhood Institutional Resources" and "Institutional Resources" sections in this chapter). Thus, the ways in which these two contexts intersect have ramifications for children's achievement.

One way in which this issue has been studied is through school reform initiatives for children living in disadvantaged neighborhoods. Some evidence suggests that when children from impoverished neighborhoods receive high quality educational services on par with those available to their peers in more affluent communities, they can thrive (e.g., DeLuca & Dayton, 2009). One example is the Promise Academy, a charter elementary and middle school located in a disadvantaged neighborhood, which was part of the HCZ described earlier (Dobbie & Fryer, 2011). Other charter schools have been found to improve children's achievement too, especially among disadvantaged youth (see Abdulkadiroğlu, Angrist, Dynarski, Kane, & Pathak, 2011; Gleason, Clark, Tuttle, & Dwyer, 2010), suggesting that charter schools may be particularly effective in comparatively disadvantaged neighborhoods, where local schools are more likely to struggle.

In addition to public charter schools, school choice voucher programs offer another way to improve access to high quality schools among children from disadvantaged neighborhoods. Charter schools are alternative public schools, whereas voucher programs allow parents to use public funds to pay tuition in a private school of their choosing. Evaluations of various school choice vouchers programs report mixed, often disappointing results (for a review see DeLuca & Dayton, 2009). Many explanations are proposed for these findings, but one relevant from a neighborhood perspective is that improving schools without improving other potentially problematic aspects of children's lives, such as their neighborhoods of residence, may be insufficient. Yet this argument is at odds with the favorable results of charter school evaluations for disadvantaged children. Clearly, studies specifically designed

to address the added value of community investments are needed to settle this issue.

Although school improvement can benefit the achievement of children living in disadvantaged neighborhoods, the reverse is not necessarily true. That is, neighborhood improvement without school improvement appears insufficient to significantly benefit children's achievement. Notably, results from the MTO experiment showed that more advantaged neighborhood conditions without corresponding changes in school conditions yielded no achievement benefits (Gennetian et al., 2012; Sanbonmatsu et al., 2006). It is important to note, however, that favorable achievement results were observed in two of the MTO sites, Baltimore and Chicago, two cities with serious problems of poverty concentration and crime (Burdick-Will et al., 2011). This finding raises the possibility that getting out of extremely disadvantaged neighborhoods might, in and of itself, be enough to make a difference for children's achievement.

This section outlined how various contexts intersect with the neighborhood context to create the complex, interrelated settings in which child development takes place. However, as covered in the next section, further complexities emerge from the fact that individual children also interact with these contexts, thus shaping their own environments as well as their exposure and responses to them.

### Person-Context Interactions

In addition to the web of contexts in which children develop (Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1), each of these contexts has its own internal complexity. Notably, Harding's work (2009, 2011) illustrates that neighborhoods are culturally heterogeneous entities, exposing children to a range of subcultures and alternative scripts. Individual children thus can choose among these models according to their backgrounds and preferences. They can even influence the range and salience of alternative subcultures available to them by eliciting responses from others via their own actions. Such a multi-faceted, ever evolving system leaves room for a lot of individual variation as to how the neighborhood context is experienced, with individual children bringing into the mix their own individual strengths, vulnerabilities, and filters (Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1). Thus, the neighborhood context likely influences development in different ways and at different degrees for different children. A growing set of studies examines this notion by considering how the link between neighborhood

characteristics and children's development is moderated by individual characteristics such as gender, race/ethnicity and biological/psychological vulnerability. The next section presents the result of neighborhood research investigating moderation along these lines.

### Gender

The moderating role of gender on "neighborhood effects" erupted in the field in part because of MTO results showing favorable effects on girls' mental health and risk behaviors, but null or negative effects for boys (Kling et al., 2007; Gennetian et al., 2012). Why did girls and boys react so differently when they moved from a very poor neighborhood to a lower poverty one? In-depth interviews with MTO participants provide interesting explanations. One such study revealed that social integration was easier for girls, in part because boys' activities and demeanor departed from the norm in their new neighborhoods, prompting negative reactions from neighborhood adults including the police (Clampet-Lundquist et al., 2011). As a result, many of these boys were drawn towards local marginalized delinquent groups or continued their involvement with peers from their old, disadvantaged neighborhoods. Given the strength of peer influences during adolescence (see the previous section in this chapter, "Synergies Between Neighborhood and Peer Contexts"), this study provides a powerful explanation for the unfavorable results observed among boys. In terms of the favorable results observed among girls, another MTO-based study revealed that issues related to safety were pivotal. In this domain, girls reported major improvements that were specific to them, notably around themes of sexual violence and victimization (Briggs, Popkin, & Goering, 2010; Popkin et al., 2010). In short, many boys experienced significant setbacks after they moved, whereas girls felt free from serious threats that loomed in their neighborhoods of origin.

These MTO findings highlight that gender may have profound implications when it comes to the direction and strength of associations among neighborhood characteristics and children's development, particularly during adolescence (see Leventhal et al., 2009, for further discussion). Clearly, the generalizability of these findings is limited to the specific case in which youth from very disadvantaged neighborhoods moved to more advantaged ones. Nonexperimental studies including diverse samples living under more typical circumstances (where neighborhood characteristics are fairly stable over time despite residential mobility) are needed to evaluate the extent to which the

MTO findings with regard to gender generalize to a wider range of contexts and situations.

The few studies tackling the question of how gender moderates associations between neighborhood characteristics and children's development generally rely on the following premise: Boys should be more sensitive to their neighborhood context than girls because they tend to receive less parental oversight and more freedom to spend time outside of the home (e.g., Kroneman, Loeber, & Hipwell, 2004). For this reason, boys living in disadvantaged neighborhoods with more crime and less social control may have greater exposure to violence and deviant peers and other negative role models as compared with girls. This exposure, in turn, may result in stronger associations between neighborhood conditions and problem behaviors among boys than girls. About a decade ago, a review of gender differences in neighborhood associations with children's and adolescents' delinquency and conduct problems, came to this conclusion, although the authors advised caution due to the small number of studies addressing the question as well as methodological issues and inconsistencies across studies (Kroneman et al., 2004). Since then, additional studies using various samples were published, but inconsistencies remain (e.g., Drukker, Kaplan, Feron, Van Os, & Korebrits, 2010; Fagan et al., 2012).

The argument for problem behaviors may not apply to mental health outcomes. That is, girls could be more adversely influenced by disadvantaged neighborhood circumstances for at least two reasons. First, as described, the MTO results revealed that in disadvantaged neighborhoods, many girls fear for their physical safety, with consequences for their well-being. Second, MTO results as well as other nonexperimental work (see this chapter's section "Synergies Between Neighborhood and Family Contexts") also suggest that neighborhood disadvantage and related conditions take a toll on maternal mental and physical health (Ludwig et al., 2011, 2012), a situation that potentially strains family relationships (see Leventhal & Brooks-Gunn, 2005). Girls may be more strongly affected by this strain than boys, as interpersonal stress has a stronger association with their mental health (e.g., Rudolph, 2002). The research base addressing this debate is very small. A study conducted in rural Iowa in the early 1990s found that neighborhood SES was associated with boys' emotional distress but not girls' (Simons et al., 1996). In contrast, several studies of predominantly minority youth find a stronger link between neighborhood conditions and girls' depressive symptoms than boys' (e.g.,

Fitzpatrick, Piko, Wright, & LaGory, 2005; Gutman & Sameroff, 2004).

With respect to achievement, the quality of institutional resources, notably child care, preschool, and schools, could be expected to play an important role (e.g., Dupéré et al., 2010; see also this chapter's section "Institutional Resources"), and there is no reason to expect that exposure to local educational opportunities will vary as a function of gender. Nevertheless, other processes may be operative. Although the strength and direction of gender differences in achievement are unclear, most studies point to stronger associations with neighborhood socioeconomic characteristics among boys than girls (Leventhal et al., 2009); however, some studies find the reverse may be true among certain subgroups (e.g., Crowder & South, 2003). Thus, the extant research on achievement is consistent with work on problem behaviors, suggesting that boys may be more sensitive to neighborhood socioeconomic conditions than girls.

The potential role of other individual characteristics, notably age, urbanicity, and race/ethnicity, to explain some of the discrepant findings in gender differences is hard to ascertain in a context where the empirical base is composed of a small number of studies that differ along multiple dimensions. As the literature continues to grow, so too will new opportunities for systematic reviews and meta-analysis, thus allowing for a better understanding of the moderating role played by gender in the link between the neighborhood context and children's development.

### ***Race/Ethnicity and Immigration Status***

There are a number of reasons why neighborhood characteristics may be differentially associated with children's development as a function of racial/ethnic or immigration status. Some researchers propose that minority children should be more strongly influenced by their local circumstances than nonminority children, as they are more likely to be embedded in dense neighborhood-based social networks (Crowder & South, 2003; Jarrett, Jefferson, & Kelly, 2010). This argument rests on the observation that such networks often are found in minority neighborhoods and may be particularly influential in a context where local ties are reinforced by the sense of a shared ethnic/racial group identity (see McBride Murry, Hill, Witherspoon, & Berkel, Chapter 11, this *Handbook*, this volume). Although the strength of the relation between neighborhood context and children's development may be generally stronger among minority children than among their European American peers, the nature and direction of the link may vary as



a function of the specific history and circumstances of different minority groups.

Among African American families, living in a disadvantaged, unsafe neighborhood takes a heavy toll on both parents and children (e.g., Crane, 1991; Crowder & South, 2003), perhaps because neighborhood crime and violence reach particularly high levels in disadvantaged, predominantly African American neighborhoods. This potential vulnerability is not limited to crime and violence, as disadvantaged African American neighborhoods are host to other social problems, including high rates of joblessness, incarceration, and family dislocation (W. J. Wilson, 1996). The challenges faced by many poor African American neighborhoods are at least in part the legacy of a long history of segregation and isolation (Massey & Denton, 1993; W. J. Wilson, 1987). As a result of this history, African American neighborhoods often cluster together in certain areas within a given city. Due to spatial contiguity and shared borders with high-poverty African American neighborhoods, even middle-class African American neighborhoods have to struggle with inner-city violence “spill overs” (Pattillo, 1998; Sampson, 2012). This situation has consequences for exposure to violence and crime: Exposure to neighborhood violence is more prevalent among African American youth as compared with other racial/ethnic groups, particularly so for those living in disadvantaged urban neighborhoods (for a review see Buka, Stichick, Birdthistle, & Earls, 2001). In addition, predominantly African American neighborhoods confront the stigma associated with ingrained negative perceptions of their neighborhoods held by individuals of all races (Sampson, 2012).

Segregation and isolation in disadvantaged neighborhoods also have ramifications for social networks by contributing to local networks that do not cut across socioeconomic or neighborhood lines (e.g., Small, 2009). Networks composed of others living close by in such neighborhoods may not lead to helpful supports and levers, but rather to increased obligations, hassles and negative outcomes (Portes, 1998). For instance, Caughy, O’Campo & Muntaner (2003) found, in a sample of African American families living in Baltimore, that greater parental social capital within the neighborhood was associated with young children’s better mental health outcomes, but only among those living in comparatively advantaged neighborhoods. Other studies find the reverse to be true in disadvantaged neighborhoods: Strong links with neighbors were associated with worse mental health outcomes (e.g., Dupéré & Perkins, 2007). Thus, the role of protective factors such as social support may be undermined in the

highly challenging neighborhood contexts that many poor African Americans children live. Conversely, weakened protective factors may result in the pronounced role of risk factors known to jeopardize children’s development. For example, one study based on the nationally representative Add Health sample found that neighborhood disadvantage amplified the link between girls’ early puberty and their substance use, but only among African American girls (Tanner-Smith, 2012). In short, the fact that disadvantaged African American neighborhoods struggle with particularly difficult conditions may undermine protective factors and amplify risk factors at other levels, individual or familial. Such interactions could generate unique situations of vulnerability among African American children living in disadvantaged African American neighborhoods.

There are signs that for Latino/a American children, living in a poor, predominately Latin American or immigrant neighborhoods (i.e., enclaves or “barrios”) may not be associated with such challenges as in the case of African American children, and may, on the contrary, have some protective effects. This proposition is linked to the literature on the so-called Latino paradox. This paradox refers to the observation that despite high levels of poverty and disadvantage, Latino/a Americans in the United States tend to have outcomes that are as good as or better than that of European Americans, notably in terms of physical health, such as birth outcomes and mortality (Mason et al., 2011), possibly behavioral outcomes, such as violence (e.g., Sampson et al., 2005), but not necessarily achievement outcomes (e.g., Gonzales, Germán, & Fabrett, 2012). This relative advantage is especially pronounced among those living in co-ethnic neighborhoods characterized by high Latino/a American concentrations and traditional collective values oriented around the family (Bécares et al., 2012; Gonzales et al., 2011).

It is important to note though that this protective function is not observed unilaterally, with the benefits associated with residence in a co-ethnic neighborhood varying according to immigration status and among subgroups within the Latino/a American population (Osyuk et al., 2012; Estrada-Martínez, Caldwell, Schulz, Diez-Roux, & Pedraza, 2013). Thus, caution is warranted to avoid overgeneralization (Leventhal & Shuey, 2014).

Various explanations are proposed as to why living in a Latino/a American enclave may confer benefits for Latino/a American youth, despite the fact that these neighborhoods are typically poor. One major explanation revolves around the observation that although poor, these neighborhoods do not experience many of the other

challenges confronting predominantly African American poor neighborhoods. Specifically, many have relatively high levels of employment and married families, along with low levels of crime and violence (Sampson, 2012). In addition, these neighborhoods are thought to be socially cohesive around a set of traditional values associated with familism (e.g., Gonzales et al., 2012; Estrada-Martínez et al., 2013). Among Mexican American families in a southwestern metropolitan area, these neighborhood characteristics served a buffering role for children's social, emotional, and behavioral functioning (Gonzales et al., 2011; Nair, White, Roosa, & Zeiders, 2013). But again, national data reveal that these links may not generalize to Latin American groups of all origins (Estrada-Martínez et al., 2013). Additional studies are needed to further examine these findings and the extent to which they apply to various subgroups and outcomes.

For Asian Americans, the role of neighborhood characteristics in children's development may parallel more closely that observed among Latino/a Americans than among African Americans, due to the unique historical roots of segregation among the latter and the larger share of recent immigration among both Latino/as and Asians (Mason et al., 2011). The handful of studies investigating neighborhood associations with Asian American children's development lends some support to this notion (Mason et al., 2011), although there are notable inconsistencies (e.g., Perreira, Harris, & Lee, 2006). As with Latino/a Americans, differences among subgroups (i.e., country of origin) within the Asian population exist in the connection between neighborhood characteristics and children's outcomes (Janevic et al., 2010), again calling for additional studies to document these trends.

Native American children represent another group that has been understudied in the field of neighborhood research, reflecting a broader neglect in the child development literature (Sarche & Whitesell, 2012). Their near total absence may be due to the fact that Native Americans are more likely to live in rural areas that are generally underrepresented in a field that mostly concentrates on urban areas (Burton & Jarrett, 2000). In addition, research with tribal communities presents unique challenges (Sarche & Whitesell, 2012). No matter the reasons, this absence is problematic. Native Americans have a special history and status in the United States, so that findings from other groups cannot be assumed to generalize. In particular, almost one-quarter of Native Americans live on reservations, underscoring their exceptionality in terms of neighborhood life (Norris, Vines, & Hoeffel, 2012).

The concentration of multiple problems on reservations, including poverty, unemployment, and substance abuse, raises many important questions that await answers from developmental scientists interested in neighborhood context.

There is some research to suggest that residence on a reservation may confer benefits in terms of adolescents' mental health (LaFromboise, Albright, & Harris, 2010), although other findings indicate that residence on a reservation may be associated with both early onset and intensity of drug use (Yu & Stiffman, 2007). Among Native American youth living off-reservation, neighborhood characteristics had no relation with their drug use (Yabiku, Dixon Rayle, Okamoto, Marsiglia, & Kulis, 2007). In line with research on other racial/ethnic groups, neighborhood disadvantage was adversely associated with a composite score of successful functioning (including being alcohol- and drug-free) in a sample including Native Americans youth both on- and off-reservation (Silmere & Stiffman, 2006). Interestingly, improving economic conditions on a reservation following the opening of a casino were associated with adolescents' improved behavioral trajectories (Stiffman, Alexander-Eitzman, Silmere, Osborne, & Brown, 2007). Even this small number of studies demonstrates the complexity of the situation, raising the possibility that links between neighborhood conditions and Native American children's development may depend on the place of residence (on- or off-reservation) and vary as a function of outcome. Moreover, as is true among other groups, Native Americans include a wide variety of subgroups with their own history and circumstances, highlighting the need for studies sensitive to this complexity.

Despite its shortcomings, the research base reviewed clearly indicates that racial/ethnic/cultural differences matter in terms of neighborhood associations with children's development. As such, this theme deserves more attention, especially among conspicuously understudied groups, such as Asians and Native Americans, as well as Latino/a Americans. The complexities of racial/ethnic differences within the United States also encourage circumspection when it comes to extrapolating an overwhelmingly U.S.-based neighborhood literature to other national contexts (e.g., Musterd & Ostendorf, 2005; Oreopoulos, 2008; Wacquant, 2008). Cross-national comparisons will become increasingly possible as the collection of studies from outside the United States continues to grow. A considerable research base in Western Europe was sufficient to support transatlantic comparisons in a review of neighborhood effects

(Galster, 2012). With neighborhood studies accumulating from developing countries as well (e.g., Kabiru, Beguy, Undie, Zulu, & Ezech, 2010; Villareal & Silva, 2006), new possibilities for cross-national studies will emerge. Such studies are needed to establish the generalizability of “neighborhood effects,” and the extent to which they are conditioned by national institutions and social structures rooted in particular historical contexts as relational developmental systems perspectives would suggest (Blossfeld, 2009).

### ***Individual Biological/Psychological Vulnerability***

In addition to gender and race/ethnicity, biological or psychological characteristics could interact with neighborhood characteristics and moderate associations with children’s development. Most of the theoretical and empirical work on this topic focuses on adolescence and on problem or risky behaviors. Theoretically, two opposing positions have been proposed (see Lynam et al., 2000 for details). The first, the “social push” perspective (Raine, 2002) argues that neighborhood disadvantage should attenuate the etiological role of biological/temperamental risk factors in the genesis of antisocial behaviors. The premise is that genetic predispositions are likely to play a central role in a benign milieu with few environmental risks (e.g., deviant peer groups, unstructured opportunities). In such an advantaged context, individual risks would *have* to be present, in all likelihood, to motivate youth’s violent or antisocial behaviors. In contrast, in very disadvantaged neighborhoods where the social risks may be numerous and where the opportunities to engage in delinquent activities are conspicuous, one would not need to have strong biological or temperamental dispositions to exhibit problem behaviors. Rather, the social push is powerful enough in these contexts to drive antisocial behaviors even among those with low to moderate levels of biological/temperamental risks.

This position can be seen as a variation on the theme of the “strong situation hypothesis” (Cooper & Withey, 2009). This hypothesis, based on the work of Mischel (1977), proposes that personality differences are especially likely to be outwardly expressed in “weak” situations offering no clear situational cues and a wide range of possibilities as to how to behave. Conversely, individual differences are expected to have less room for expression in “strong” situations where the choice of behavioral outcomes is severely limited and where everyone is bound to behave in a similar way. Highly disadvantaged neighborhoods are thought to be one example of a strong situation that severely limits the possibilities for conventional behavior (Lynam et al.,

2000); however, this proposition is at odds with Harding’s (2009, 2011) work on cultural heterogeneity, which suggests that the variety of alternative behavioral scripts is wider in more disadvantaged neighborhoods as compared with less disadvantaged ones, where one pathway often clearly dominates all others. Less disadvantaged neighborhoods arguably could be described as a social context offering strong situational cues encouraging conformity and limiting the expression of individual differences. Thus, individual risks could play a magnified role in highly disadvantaged neighborhood contexts.

In line with this latter prediction, the second theoretical position rests on an amplification or synergetic perspectives as described earlier (see this chapter’s section “Synergies between Neighborhood and Family Contexts”), where the combination of risks at the individual level, along with situational incentives, creates the right mix for problematic behaviors to emerge (see Lynam et al., 2000). This view is consistent with general theories of child development highlighting the interactions between nature and nurture (see Lerner, Lerner, Bowers, & Geldhof, Chapter 16, this *Handbook*, Volume 1). It is also consistent with specific theories in criminology proposing that an individual’s propensity for antisocial behavior is more likely to translate into actual criminal behavior for those exposed to crime-prone environments (Agnew, Brezina, Wright, & Cullen, 2002; Wright, Caspi, Moffitt, & Silva, 2001). So far, the empirical neighborhood literature generally supports this amplification perspective over the social push hypothesis (e.g., Schonberg & Shaw, 2007). In most studies, neighborhood disadvantage interacts with individual risk factors in a manner amplifying problematic outcomes. For example, the link between impulsivity or self-control and delinquency-related outcomes was strongest in disadvantaged neighborhoods in both city-based and national samples (e.g., Gibson, 2012; Jones & Lynam, 2009; Meier, Slutske, Arndt, & Cadoret, 2008). This conclusion should be considered tentative, because it is based on a small number of studies and discrepant findings exist (e.g., Zimmerman, 2010).

Interactions between neighborhood and individual risks emerged in studies looking at other individual risks aside from impulsivity. Notably, early pubertal development is more strongly associated with girls’ problem behaviors in disadvantaged neighborhoods than in more advantaged ones (e.g., Foshee et al., 2007; Obeidallah, Brennan, Brooks-Gunn, & Earls, 2004). Relatedly, Canadian girls with a history of conduct problems during childhood were found to be more likely to report early sexual debut, but

only if this individual risk was combined with neighborhood disadvantage (Dupéré et al., 2010). This work is also consistent with the amplification perspective.

Thus, a general pattern of results supports the amplification hypothesis, but discrepant findings continue to raise questions regarding its role relative to the social push perspective. Many possible explanations have been proposed for these discrepancies, such as the different ways in which individual vulnerabilities and neighborhood characteristics were measured in different studies, as well as the different developmental periods considered (e.g., Zimmerman, 2010).

In sum, this section highlighted the ways in which individuals contribute to their development, but most of the research falls short of considering the bidirectional nature of these influences. That is, individual attributes not only intersect with the neighborhood context in meaningful ways for children's development, but also shape the neighborhood context in which this development unfolds.

## NEIGHBORHOOD AS A UNIT OF INTERVENTION FOR IMPROVING CHILDREN'S DEVELOPMENT

The research reviewed in this chapter thus far suggests that neighborhood context is associated with children's development, though clearly the nature, scope, and magnitude of these associations remain debatable. Nevertheless, interventions aimed at improving neighborhood conditions hold some promise for promoting children's health and well-being and remain better positioned than ever to build off of a growing research base than previous efforts described at the beginning of this chapter (see the section "Progressive Era to Promise Neighborhoods"). With this goal in mind, two types of interventions are addressed: (1) "people-based," which move residents out of poor neighborhoods to nonpoor ones; and (2) "place-based," which invest locally in communities to improve living conditions for current residents (see also "Neighborhood SES" in this chapter).

### People-Based Interventions

The goal of people-based interventions is to expand the residential options of low-income families. Because of limited economic means, low-income families' housing choices are constrained, often restricting them to more affordable housing located in disadvantaged neighborhoods. Subsidies partially covering the cost of rent are one way to help poor

families afford housing. However, unless special assistance with relocation is provided or restrictions on relocation are placed, it is unclear if families given subsidies locate in more advantaged neighborhoods, though they often avoid the most distressed neighborhoods where public housing is located.

MTO is a prime example of this policy approach and represents both its successes and failures. It was successful in the sense that many of the families in the experimental treatment group took advantage of the opportunity to move to safer, less poor neighborhoods than their original neighborhoods. Yet, it failed because more than half of these same families did not relocate because they were unable to find a new unit in the private market, among other reasons. Even among those families who moved to lower poverty neighborhoods, exposure to favorable neighborhood condition was relative, and in many cases short-lived. True, the new neighborhoods were more economically advantaged at the time of the move, but many destination neighborhoods were either on a downward economic slope, or not racially diverse, or both. Moreover, the moves were not associated with noteworthy improvements in school conditions (Gennetian et al., 2012). In addition, after the initial MTO move to better neighborhoods, many families returned to disadvantaged areas. In any case, mobility programs such as MTO necessarily serve only a small fraction of eligible families and may engender some public resistance both from receiving neighborhoods where families relocate as well as from origin neighborhood where others are left behind. Thus, alternative approaches to improve disadvantaged neighborhoods themselves are needed.

Before we move on to discuss place-based strategy, it is important to note one important alternative strategy to the use of vouchers for subsidizing private rental housing in nonpoor neighborhoods. This alternative consists of building new public or affordable housing units in such neighborhoods. This strategy may lead to more stable placement in nonpoor areas than vouchers where problems with landlords can arise, for example, thus potentially avoiding some of the challenges encountered in MTO (though other types of challenges arise; Fauth et al., 2008). However, just as was the case for MTO, mixed results suggest that the effectiveness of this strategy might depend on the general context of mobility. That is, mobility within a city and with no corresponding change in school quality may not lead to favorable outcomes, as was observed in the Yonkers case (Fauth et al., 2007). Still, quasi-experimental evidence emerging from another project entailing the construction of affordable housing units in an affluent



suburb in Mount Laurel, New Jersey, suggests that this strategy has the potential to lead to favorable economic, educational and emotional outcomes (Casciano & Massey, 2012). These findings converge with the generally positive outcomes for Gautreaux families, who largely relocated to suburban areas, and with more recent nonexperimental studies in which mobility from disadvantaged urban neighborhoods to more affluent suburbs was associated with beneficial outcomes, as compared with mobility from one disadvantaged city neighborhood to another (Dupéré et al., 2012; Sharkey, 2012).

### Place-Based Interventions

Placed-based interventions offer an alternative to mobility where the goal is to address neighborhood conditions themselves. Earlier efforts targeting crime prevention in the “neighborhood watch” tradition had some success (Bennett, Holloway, & Farrington, 2008). Building on these efforts, new and broader approaches focusing explicitly on children and families have emerged, with promising results.

A notable example is HCZ (Harlem Children’s Zone, 2009). As described earlier, the program’s explicit goal is to improve the life chances of all children living in a targeted disadvantaged section of Harlem. The program is based on the premise that to lift children out of poverty, they have to graduate from high school and go to college, so that they can successfully integrate into a knowledge-based job market. To achieve this ambitious goal, HCZ proposes a “pipeline” approach, spanning the life course from before birth to college, and involving coordinated community-based services in the educational, health, and social domains. As noted, the program is favorably associated with children’s achievement; however, it remains unclear whether the complete bundle of HCZ services is necessary, over and above the charter schools, to achieve these results (Dobbie & Fryer, 2011; see also this chapter’s section “Synergies between Neighborhood and School Contexts”). In any case, HCZ’s success has been well received and replication efforts are occurring in many communities through Promise Neighborhoods.

Communities that Care (CTC) represents another form of community investment shown to foster healthy child development (e.g., Hawkins et al., 2009). In contrast with the HCZ, CTC does not have any specific program or target. Rather, it proposes a five-step process aimed at mobilizing key community actors towards the selection and implementation of effective programs suited to the

specific needs and circumstances of their local youth. CTC was developed over the past 30 years within a U.S. federal entity, the Center for Substance Abuse Prevention (CSAP). Not surprisingly, given its origin within CSAP, CTC primarily focuses on the prevention of substance abuse problems, although other types of psychosocial difficulties such as delinquency are targeted. CTC was tested in the context of a trial in which 24 communities were randomly assigned to control and intervention conditions, with favorable and cost-effective results (Hawkins et al., 2009; Kuklinski, Briney, Hawkins, & Catalano, 2012). Thus, CTC provides an example of a community-based intervention with demonstrated effectiveness within a randomized controlled trial.

Poverty deconcentration approaches address the problem from a somewhat different angle. Instead of trying to counteract the adverse effects of concentrated poverty, the root of the problem is targeted by supporting the development of mixed-income neighborhoods. HOPE VI, mentioned briefly earlier, is a well-known example of this approach. Infamous housing projects such as the Robert Taylor Homes in Chicago were demolished as part of HOPE VI, with the goal of replacing them with mixed-income communities. Although the effectiveness as well as underlying premise of such efforts have been questioned (Cheshire, 2012), some evidence suggests that HOPE VI had long run benefits for families (Popkin et al., 2009).

The existing options for community-based intervention are not limited to the few examples discussed here. Beyond the varied approaches that already exist, many other potential avenues for community-based interventions are worth exploring, based on neighborhood effect theory and research. Clearly, there is room for innovation in this domain. Policywise, pursuing community-level interventions makes sense, as it could offer more effective options with potentially wider reaching effects than interventions targeting individuals.

### BUILDING THE FRAMEWORK

As the field of neighborhood research moves forward and plays an increasingly important role in policy, we would like to build a more dynamic framework for conceptualizing and assessing children’s development in the neighborhood context—one that takes a truly relational developmental systems perspective. As our review of extant research indicated, we have made some progress in

beginning to think dynamically and developmentally about the link between neighborhood structure and children's outcomes. In addition, our understanding of the features of neighborhoods that matter most has expanded beyond structure, as has our knowledge of how neighborhoods intersect with children's other important social contexts and salient individual characteristics. We begin this section by laying out some of the conceptual issues that need to be considered for a dynamic framework and then move onto the methodological tools that will get us there.

### **Promising Conceptual Directions**

The previous sections of this chapter raised several important theoretical themes that merit further attention. We address them here as promising conceptual directions for a new framework.

#### ***Developmental Timing***

As we discussed in the section "Neighborhood SES," longitudinal research has begun to explore if the role of neighborhood SES varies across development. This issue is fundamental to our understanding of neighborhood influences. Although the existing research reviewed is too limited to adjudicate among the various hypotheses presented (cumulative, adolescence, and early childhood), it points to several related issues with regard to timing that merit attention. It may be that no single hypothesis prevails because the role of neighborhood influences varies by the aspect of neighborhood and the outcome under consideration. Given general variation in patterns of associations among neighborhood SES and children's outcomes, such an expectation is reasonable. Further, the manner in which neighborhoods influence children is also likely to shift across development. For instance, when it comes to achievement outcomes, economic and institutional resources during early childhood, including at the neighborhood level, are thought to be particularly important. For behavioral functioning, neighborhood poverty and collective efficacy during adolescence may be especially relevant, because monitoring of unstructured time with peers is critical during this period. Thus, it remains a question of not only when neighborhoods matter, but how they matter at different points in the life course and even for whom.

#### ***Dynamic Models***

Although longitudinal models are an important development in the field because they help to capture a broader

picture of children's neighborhood experiences, they often ignore the dynamic nature of neighborhood influences. Beyond issues of developmental timing, as just discussed, neighborhood contexts change over the course of development through both mobility and internal neighborhood dynamics (e.g., gentrification). New research in this area from nonexperimental studies as well as policy experiments suggests that these changes have implications for development (e.g., Leventhal & Brooks-Gunn, 2011). Thus, we should not ignore the meaning of smaller time units of exposure determined by the changing neighborhood circumstances in which children develop.

Another dynamic aspect of neighborhoods is space. In this chapter, we generally advocate for using census definitions of neighborhoods; however, many have argued for and against their use (e.g., McBride Murry et al., 2011). One promising approach for dealing with concerns about artificial boundaries is to employ GIS techniques that incorporate features of surrounding neighborhoods into estimates of neighborhood influences. Research along these lines has generated mixed results (e.g., Caughy et al., 2007; South & Crowder, 2010), but it merits additional attention for conceptualizing a range of issues such as how the spatial embeddedness of one's neighborhood or how larger spatial dynamics matters for development (see also Sampson, 2012). In addition, it can contribute to our understanding of more specific issues, such as the extent of overlap between home and school neighborhoods or how the distance of a move from one neighborhood to the next influences children's development. In short, researchers should think more broadly about what constitutes the neighborhood context rather than viewing it as an isolated geographic unit as in most existing research.

#### ***Bidirectionality***

This chapter focuses on the meaning of neighborhoods for individual children, but individuals also influence their neighborhoods as we discussed at some length already (see the section "Person-Context Interactions"). Yet, most research does not truly address how individuals select and shape their exposure to neighborhood influences despite much speculation about the bidirectional nature of neighborhood effects. For example, a study on parenting reported that increases in collective efficacy were associated with increases in authoritative parenting, but the reverse was not true (Simons et al., 2005). This study as well as others suggests that we need to frame our expectations regarding bidirectionality more explicitly rather than implicitly.

Along these same lines, little attention has been given to how neighborhood social processes arise and the role of residents, both individually and collectively, in the development of these processes. Clearly neighborhood structural characteristics, such as affluence, facilitate neighborhood processes, but nonetheless, neighborhoods can be cohesive and collectively efficacious even in the face of disadvantage. Small (2011), for example, argues that it is individuals' "organizational embeddedness" that allows for individuals within a neighborhood to become a community—that is, the institutions through which people interact are more or less successful in promoting networks that can function at both the individual and neighborhood levels. Related work has begun to identify characteristics that make neighborhoods resilient in the face of risk, including the presence of social networks and supports, infrastructure and support services, sense of purpose, and leadership (Buikstra et al., 2010; Maton, 2005). We see this area as one that will push the field forward conceptually and provide a stronger foundation for policy and practice.

### *Expanding the Scope*

A major goal of this chapter was to move beyond documenting links between neighborhoods and children's development and to address *how* and *why* neighborhoods matter. That being said, our understanding of these basic relations is limited in several important ways. For one, despite the rather widespread use of national data, we need to shift our conceptual focus away from urban, often poor areas, to consider a broader range of neighborhoods in terms of geographic locale and demographic makeup. In addition, much of the work on neighborhood processes is based on PHDCN, which was conducted in Chicago in the 1990s, and we need to understand if findings replicate in other locales and during different historical circumstances (Elder et al., Chapter 2, this *Handbook*, this volume).

A related point is that we should explore how wider city dynamics such as segregation, state policy contexts, and population dynamics play a role in neighborhood influences on children's development. Likewise, as we called for earlier, addressing the generalizability of research conducted in the United States is critical for documenting the salience of neighborhood context for children's development. Like other areas of child development, the field of neighborhood research would benefit from more replication studies across time and space (Duncan, Engel, Claessens, & Dowsett, 2012).

Finally, another way in which we need to expand the scope is by moving away from taking a deficit approach to

our study of children's development in the neighborhood context. Given the roots of neighborhood effects research in urban sociology, an emphasis on concentrated poverty, and with it, a focus on problematic behavior, has prevailed. We would like to see a shift towards considering the ways in which neighborhoods support children's development. The research mentioned earlier on neighborhood resilience is a promising direction, but should not be limited to disadvantaged contexts.

### **Promising Methodological Directions**

To incorporate such a developmental, dynamic framework in neighborhood studies, various methodological advances are needed to move the field forward. The following sections briefly review some methodological innovations that are promising with regards to this goal.

#### *Longitudinal Studies*

To allow for developmentally informed studies that take into account neighborhood dynamics, longitudinal studies following both neighborhoods and children and families are needed. In this respect, PHDCN is a prime example where both neighborhoods and individual children and their families were assessed at multiple time points and using multiple informants (see "Approaches to Studying Neighborhood Influences on Children's Development" section earlier in the chapter for details). Moreover, if interactions across contexts, including with families, peers, and schools, have a growing place in the neighborhood literature, it is essential that we give the same attention to assessing the neighborhood context that researchers have paid to these other contexts.

#### *Measuring Neighborhood Characteristics*

In terms of innovative neighborhood measurement strategies, PHDCN again stands out. An explicit goal from the start was to investigate links between neighborhood conditions and children's development (for a history of the PHDCN study, see Sampson, 2012), which contrasts with many other longitudinal developmental studies where the neighborhood context typically was considered post-hoc and restricted to census data. In the "Measuring Neighborhood Processes" section, we described these innovative methods in detail (community survey, systematic observation, administrative data, and expert survey) and highlighted them in our review of neighborhood influences on children's development, but their use is still

relatively scarce. However, some promising developments should push the field forward.

For one, a number of international studies modeled after PHDCN incorporated independent community surveys into longitudinal developmental studies (see Sampson, 2012 for details). In addition, new technologies offer interesting and comparatively cost effective options for conducting SSOs more routinely in developmental studies (e.g., Odgers, Caspi, Bates, et al., 2012; Rundle, Bader, Richards, Neckerman, & Teitler, 2011; see also Hoglebe, 2012, for a larger discussion of the role of GIS technologies in the field of neighborhood research). The increasing availability of administrative and public data offers another rich source of information on neighborhoods that has yet to be fully mined by researchers.

We strongly encourage more researchers interested in studying children in neighborhood contexts to consider their measurement *a priori* and to do so in a fashion that is ecologically valid, including making clear distinctions between neighborhood-level measurements and individual-level measurements of neighborhood perceptions. One prime example where such work is needed is in regard to the direct measurement of local institutions' *quality* to tackle the role of institutions in explaining developmental disparities across neighborhoods.

### ***Innovative Research Designs***

As is the case with measuring the neighborhood context, greater attention should be given to study designs. In a field dominated by nonexperimental studies, the MTO experiment was considered a major breakthrough because of its true experimental design. Yet much has been written about its strengths and flaws (e.g., Briggs et al., 2010; Sampson, 2008). The controversy surrounding MTO underscores the need for other experimental studies to tackle the selection bias problem, while avoiding some of its limitations. The prohibitive cost of MTO is one limitation that is relevant here and suggests the need for more affordable approaches that can be used more routinely.

As one such example, a series of experiments in the Netherlands was conducted to test the premise that physical signs of disorder on a neighborhood street can facilitate deviant behavior (Keizer, Lindenberg, & Steg, 2008). In one of the experiments, individuals were more likely to steal an envelope half-inserted in a mailbox and visibly containing money if the mailbox was covered with graffiti than if it was not. Another alternative is the use of natural experiments (see the section "Approaches to Studying Neighborhood Influences on Children's Development" for

additional detail). Clearly, not all of these studies focused on neighborhoods and children's development *per se*, but we see this work as a promising avenue for developmental research on neighborhood contexts to explore. An important point to acknowledge is that many experimental studies lack generalizability, because of their unique populations or circumstances, despite their inherent methodological strengths at addressing selection.

Although many have argued for a stronger adherence to experimental methods in neighborhood research (Ludwig et al., 2008), there is still an important place for non-experimental neighborhood research, particularly in the case of children's development (Sampson, 2008). Because nonexperimental research is likely to continue to play a central role in neighborhood research—and should—we encourage researchers to use research designs and analytical strategies meant to limit potential selection bias in the context of this work.

In terms of nonexperimental study designs, if assessing the role neighborhoods play in children's development is a primary study goal, then neighborhoods need to be incorporated into the study design (e.g., PHDCN and LA FANS) to generate desired variability in neighborhood contexts, to permit more robust analytic methods, and to allow for the construction of neighborhood-level measures (absent a community survey). Even in the case of neighborhood-based designs, selection bias remains an inherent problem. We reviewed various analytic methods for addressing this problem earlier (e.g., propensity score matching, sibling designs, instrumental variable analyses, and behavioral genetics; see the section "Approaches to Studying Neighborhood Influences on Children's Development" for a description), and are encouraged that such techniques are gaining popularity. The field will need to continue to push itself further in ensuring that researchers incorporate these more rigorous methods, and in a manner that addresses the dynamic interplay of neighborhoods with other contexts and individual characteristics.

### ***Mixed Methods***

The research designs just described all attempt to identify "true" neighborhood effects that are not confounded by other factors that influence neighborhood selection. This focus on the identification of causal relations has consumed much of the field in recent decades, overshadowing efforts to understand *how* the neighborhood context influences children's daily lives (Small & Feldman, 2012). Thus, a paucity of research takes a long, deep look at the lived realities that underpin the observed statistical links. In this



vein, researchers argue that to move forward, the field need not accumulate more studies trying to isolate neighborhood effects and instead call for new approaches to generate ideas and make sense of previous results (e.g., Harding, Gennetian, Winship, Sanbonmatsu, & Kling, 2011; Small & Feldman, 2012).

Mixed-methods studies combining quantitative and qualitative approaches offer one interesting avenue to attain such goals (Tolan & Deutsch, Chapter 19, this *Handbook*, Volume 1). One oft-cited exemplar case of a successful mixed-methods approach is, again, the MTO study. The qualitative work was instrumental in understanding major and unexpected results because elements not included in the survey emerged as central for understanding this disparity. Other notable examples combining interviews conducted in contrasted neighborhoods with surveys include the work of Small (2009) on child care services and that of Harding (2009, 2010) on violent confrontations. Again, we encourage neighborhood researchers to expand their existing set of tools to push the field forward.

## Conclusions

The evidence from a growing body of research and policy initiatives is clear: Neighborhoods matter for children's development, but much debate remains about the manner in which neighborhoods matter. Addressing this debate will entail better integration of neighborhood research within a relational developmental systems framework. We have tried to address the theoretical underpinnings of moving towards this goal and the methodological approaches that will help get us there.

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## CHAPTER 14

# Children and Socioeconomic Status

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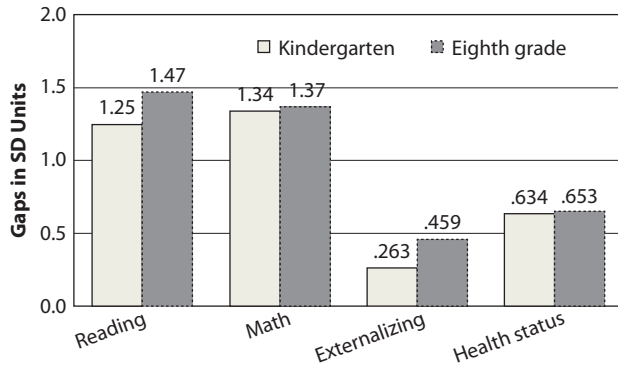
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## INTRODUCTION

Socioeconomic status (SES) refers to one's access to economic and social resources and the social positioning, privileges, and prestige that derive from these resources (Entwisle & Astone, 1994). The connection between one's starting position in the SES distribution, child experiences, and later life outcomes has been a stubborn feature of life. Scholars from a wide variety of disciplines have theorized about and attempted to assess the extent to which SES influences developmental processes and outcomes as well as the processes by which this happens. Taken together, this knowledge of SES and child development is both voluminous and incomplete. The purpose of this chapter is to guide readers through the theoretical perspectives and empirical studies linking family SES to children's development and highlight points of consensus within the field, and areas in need of more research. The salience of SES in children's lives is seen early in life when considering

difference in child well-being. In the fall of 1998, the Early Childhood Longitudinal Study (ECLS-K) collected nationally representative data on kindergarten children's test scores and more general development, and followed the children through eighth grade. The ECLS-K also asked children's parents about their own schooling, occupations, and household incomes. Combining these elements into a single socioeconomic status index and comparing children with different SES index values demonstrates the nature of SES gaps in children's school readiness and later achievement. For reading achievement—skills such as recognizing letters and associating letters with sounds at the beginning of words—the difference was 1.25 standard deviations between children in the bottom and top 20% of the SES distribution (Figure 14.1). For math achievement—skills such as recognizing numbers and geometric shapes, counting, recognizing patterns—the same SES gap was slightly larger. Although one might hope that formal schooling would reduce these skill gaps,



**Figure 14.1** Achievement, behavior, and health gaps between low- and high-SES kindergarteners and eighth graders.

*Source:* Authors' calculations based on data from the ECLS-K. Bars show differences between children in the top and bottom quintiles of socioeconomic status. Higher values on the externalizing scale represent better behavior.

both were larger in eighth grade than they had been at school entry.

SES-based differences in children's behavior and health were also apparent, although considerably smaller than differences in math and reading achievement skills. The teachers of children in the top compared with the bottom 20% of the SES distribution reported less aggressive behavior in kindergarten, and parents of higher-SES children reported that their children were healthier as well. These differences early in life portend differing levels of educational attainment and success in the labor market as well as differing levels of involvement in the criminal justice system and patterns of family formation. The transmission of SES advantage from parents to children is found both historically and internationally (Ermisch, Jäntti, & Smeeding, 2012; Smeeding, Jäntti, & Erikson, 2011).

The fact that children's skills, health, and behavior differ so much across the SES distribution leads many to conclude that SES itself must be shaping children's experiences and opportunities. Our review points to both theoretical frameworks and empirical evidence that support a causal pathway. Children from higher-SES families are afforded many advantages. Compared with their lower-SES peers, they are more likely to be raised by two biological parents and less likely to have mothers who experience mental health difficulties such as depression (Lee & Burkam, 2002). They tend to experience high-quality early education, schools, and health care. They reside in safer neighborhoods and engage in more after-school enrichment activities (McLoyd, 1998). Finally, children from higher-SES families tend to experience warmer, more responsive and

stimulating parenting and are exposed to more varied and complex language and conversation (Hart & Risley, 1995; McLoyd, 1998). Nevertheless, there are reasons to believe that socioeconomic circumstances are not as consequential for children's development as one might think (Sobel, 1998). Our review of the empirical evidence for this chapter seeks to sharpen the understanding of how and to what extent SES shapes the life course of children.

The chapter begins by providing a review of how scholars define and measure family SES, as well as some stylized facts about its three component parts: income and poverty, parental education, and parental occupation. In the next section, demographic and economic trends in SES components are reviewed, with specific attention devoted to increasing inequality. Following this important descriptive information, three theoretical approaches are presented: the family and environmental stress perspective, the resource and investment perspective, and cultural perspectives. Before reviewing the empirical literature on the connections between household SES and children's development, we describe the multiple challenges that researchers face when trying to establish causal connections between SES and outcomes. Finally, we discuss the implications of the research findings for policy. We conclude by identifying theoretical and empirical work that would improve our understanding of how household SES affects children and families.

## DEFINITIONS OF SES-BASED RESOURCES

SES refers to one's access to economic and social resources and the social positioning, privileges, and prestige that derive from these resources (Hauser & Warren, 1997; Mueller & Parcel, 1981). Some social scientists lump many indicators of financial and social resources under the umbrella of "socioeconomic status" (SES). Others identify the defining features of SES as cultural differences in habits, tastes, linguistic patterns, preferences, and world-views (Entwisle, Alexander, & Olson, 2005; Lareau, 2003). Although these perspectives differ in what they offer as central explanatory constructs of SES, both suggest that proximal environments, particularly family and childrearing environments, are the critical link between a family's SES and a child's well-being.

Researchers' differing conceptual views of SES lead to discrepant approaches to measurement. Because it may be difficult to measure a family's access to economic and

social resources or their position in a social hierarchy, social scientists often use a single indicator, typically occupation or maternal education, or combine indicators (e.g., parental education and income) into scales that proxy for families' SES (Hauser & Warren, 1997; Mueller & Parcel, 1981). The SES gaps shown in Figure 14.1 exemplify the single-indicator approach, in this case by combining education and income. A single indicator may serve as an effective index for other possible indicators because social structures tend to ensure that education, income, and occupation are strongly related. Most scholars using SES indexes recognize that SES is multidetermined, consider social stratification to be a powerful organizing force in individuals' lives, and presume that one's overall social standing (or social class) is more important than the particular combination of economic and social resources that determine or measure it.

This holistic approach argues that a household's social and economic resources are not additive pieces, but rather, when taken together, constitute a single social ecological phenomenon. Additional scholarship focuses on broader SES constructs, especially neighborhood and community SES, and this work is not included here because it is reviewed thoroughly elsewhere in this volume (Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume).

An alternative view of SES is based on the premise that distinct types of socioeconomic resources contribute to social inequality and stratification along differing economic and social dimensions (Bollen, Glanville, & Stecklov, 2001). This standpoint does not prescribe how each dimension interacts or relates to the others, but it does argue that they can be understood better when identified individually rather than as only part of a larger superordinate construct. For example, although parents' educational attainments, incomes, and occupations are correlated, each may affect children in different ways (Duncan & Magnuson, 2003). It is perhaps not surprising that individual SES components often explain more variation in family processes than aggregated SES indexes (Callahan & Eyberg, 2010).

A related construct—social class—is sometimes used interchangeably with SES because it refers to one's social status as determined by their access to valuable social and economic resources. Social class differs from SES, however, because it is typically assessed by an individual's subjective categorical rating of their social position rather than by indicators of the social and economic resources from which their position is derived (Liu et al., 2004). In these assessments, study participants either place

themselves on a scale or ladder or they indicate which social class they belong to or identify with (e.g., working class, middle class, upper class). Most often, social class measures are used when collecting specific information is difficult, for example when asking for retrospective accounts of childhood SES, and when the subjective aspects of social status are thought to be more relevant than the actual resources and conditions.

Given the moderate-to-high correlations among SES components, it is sometimes difficult to empirically sort out their separate effects, especially in school or community samples with restricted ranges of SES variation. Yet, even with sufficient variability, an attempt to estimate the contribution of distinct SES components fails to account for importance of the constellation and accumulation of household resources, as such additive models may fail to identify how each component part contributes to the functioning of an organized system of parts.

Nevertheless, scholars using surveys drawn from diverse or national samples of children have concluded that components of SES have differential effects on parenting and children's development, and recommend that for many purposes they not be combined into a single scale (Bornstein, Hahn, Suwalsky, & Haynes, 2003; Duncan & Magnuson, 2003). For this reason, much of our discussion is organized around the specific components of family SES: income (including related constructs of wealth and poverty), education, and occupation. However, we remind readers that these dimensions are contextually defined parts of the larger SES construct.

Although at first glance income, poverty, wealth, education, and occupation may seem easy to define and measure, social scientists have expended considerable energy describing these dimensions and elaborating on how they can be used to measure SES, or more specifically dimensions of SES resources (see Hernandez, 1997, for practical measurement suggestions). In the sections that follow, we provide a discussion of the definitional and measurement issues for these constructs, and provide some important information about how these dimensions of SES are distributed across the U.S. population and experienced by individuals over their life course.

## Income

Household income is the sum of income from all sources received by all members of the household over some time period, typically a calendar year or month. When combined with a measure of household wealth (see below),

a household's income measures its ability to provide its children with food, shelter, a quality home or childcare environment, and a safe and stimulating community setting. As would be expected, there is considerable variation in household income in the United States. In 2012 the median household income was about \$50,000. The bottom 20% of the distribution had household incomes below about \$20,000, whereas the top 20% of the distribution had household incomes of about \$100,000 or higher (U.S. Census Bureau, 2012a).

Adjustments for the inclusion of "near-cash" sources of income such as food and payments from the Earned Income Tax Credit, and subtraction of taxes paid, produce a better approximation to the income that a household can actually use for purchase of goods and services (disposable income). Division of household income by household size or, better yet, the federal poverty threshold, which is based on household size, produces a more refined measure of its per capita command over resources. A family's income divided by its poverty threshold is referred to as its income-to-needs ratio (Citro & Michael, 1995).

Contrary to popular belief, and in comparison to other SES-based measures, family income is quite volatile across a family's life cycle, and across childhood, in particular (Duncan, Brooks-Gunn, Yeung, & Smith, 1998). On average, family incomes increase as children age, but average patterns conceal a great deal of year-to-year volatility, making it important to measure economic resources during the particular childhood stage in which income-based SES influences are sought. Income instability also imparts considerable error to a single year's measure of household income if it is taken as a measure of "permanent" income.

For many nonelderly households, adult earnings from the labor market are the primary source of income. An individual's hourly wage is usually obtained by dividing labor-market earnings received over some time period by the total number of hours worked during that time. Workers paid by the hour have an hourly wage rate that may differ between regular and overtime hours.

Perhaps surprisingly, some economists would nominate the hourly wage rate as *the* best summary measure of individual SES. This is because they conceive of it as a good measure of an individual's stock of skills—the productivity of his or her time either at work or at home. How an individual chooses to allocate time between market work and childcare (and other "home production") activities depends on a host of factors, such as family structure and local-area employment conditions as well as individual preferences. For individuals who spend all of their time on

home production, including childcare, their hourly wage is not considered to be zero, but rather the wage they could receive if they chose to enter the labor market. Thus, the product of the hourly wage and 16 waking hours provides a measure of the total value of those waking hours, regardless of how those hours happen to be divided between paid and unpaid work.

## Poverty

Poverty focuses on variation at the low end of the income distribution and its relation to economic deprivation (Citro & Michael, 1995). Social scientists have proposed many household-income-based definitions of poverty. The official U.S. definition of poverty is based on a comparison of a household's income with an income threshold level that varies with family size, the age of household members, and over time with inflation. In 2012, the respective thresholds for two-, three-, and four-person families with a single parent were \$15,825, \$18,498, and \$23,364 (U.S. Census Bureau, 2012b). For the purposes of poverty calculations, household income is defined as pretax income, and excludes in-kind and near-cash welfare benefits such as childcare subsidies, housing vouchers, or Supplemental Nutrition Assistance Program (SNAP, formerly food stamps). Households with incomes below these thresholds are considered "poor," whereas households with incomes above the thresholds are considered not poor. A household's poverty status is assumed to apply to each household member. Thresholds are adjusted each year for inflation using the general consumer price index, but not for changes in living standards of the general population. These federal poverty thresholds were created in the 1960s primarily for purposes of tracking trends in poverty across the United States, and the U.S. Census Bureau provides annual reports detailing poverty rates across a range of relevant demographic groups.

Though having a consistent measure of poverty across groups and over time has been invaluable to policymakers and scholars, the federal measure of poverty is not without flaws. In 2012, a "Supplemental Poverty Measure" (SPM) was developed to provide a useful alternative measure of economic deprivation. It is not intended to replace the existing federal poverty measure. Following recommendations of a committee established by the National Research Council (Citro & Michael, 1995), the SPM poverty line is set at a fixed percentile of actual expenditures for commodities that all families must purchase: food, shelter, clothing, and utilities as tracked by the Consumer Expenditure Survey.



Thus, in contrast with the existing set of poverty thresholds, the SPM changes with living standards. This is important because some costs such as housing can increase faster than others such as food. Another important point of departure from current poverty thresholds is that the SPM goes beyond cash income to include noncash benefits such as payments from the SNAP program and posttax transfers such as the Earned Income Tax Credit. With many current welfare benefits providing in-kind benefits rather than cash support, this may better reflect a family's ability to purchase needed goods. Finally, work expenses and out-of-pocket medical expenses are subtracted from household income, in an effort to better measure disposable income and purchasing power. Analyses suggest that the SPM generates slightly higher poverty rates than the current federal poverty measure, although poverty rates would be lower for children and higher for working age and elderly adults using the SPM (Short, 2012).

According to opinion polls, official poverty thresholds are lower than the amounts of money—typically around \$30,000 (in 2012 dollars)—judged by Americans as necessary to “get along in their community,” to “live decently,” or to avoid hardship (Vaughn, 1993). A detailed ethnographic study of family budgets identified \$25,680 (in 2012 dollars) as the approximate income level necessary for a thrifty three-person family to live without severe hardship (Edin & Lein, 1997). This figure exceeds the official poverty thresholds by about \$6,000—one-third higher in the United States. Child poverty rates are higher than rates for the adult and elderly populations. In 2011, 21.4% of children, over 15.5 million, lived in families with incomes below the official poverty threshold compared with only 13.7% of adults under Age 65, over 26.5 million. Another 22.4% of children lived in families with incomes between 100 and 200% of the poverty threshold (DeNavas-Walt, Proctor, & Smith, 2012; U.S. Census Bureau, 2012a). Although it is difficult to make international comparisons, research suggests that the United States has one of the highest rates of child poverty among western industrialized nations (Bradbury & Jäntti, 2001). Young children have higher rates of poverty than older children—the 2011 poverty rate for children under Age 5 was 25.1% while it was 20.7% for children Ages 5 to 17 (U.S. Census Bureau, 2012b). Parents of young children do not earn as much as parents of older children because they themselves are younger and have less work experience. It is also possible that the higher cost of childcare for young children reduces parents' employment. Poverty rates are also considerably higher among some racial and ethnic minority children

compared with White children. In 2011, the poverty rate for children under Age 18 was 37.2% for Blacks, 33.7% for Hispanics, 12.6% for Asians, and 18.1% for Whites (DeNavas-Walt et al., 2012). Data from earlier years also suggest that children of immigrants also experience higher rates of poverty than children of native-born parents (24% versus 12%; Fass & Cauthen, 2007). Finally, poverty rates also differ by family structure. In 2011, about 12.1% of children living in married families were poor, compared with 57.2% of children living in unmarried, female headed families (DeNavas-Walt et al., 2012).

How persistent is poverty? These annual poverty rates provide only a snapshot of the number of children in poverty. With child poverty rates remaining relatively stable over time, it would be easy to mistakenly conclude that the population of children experiencing poverty also changes little. We speak easily of “the poor” as if they were an ever-present and unchanging group. Indeed, the way we conceptualize the “poverty problem” or the “underclass problem” presumes the permanent existence of well-defined economic groups within American society. In fact, longitudinal data have always revealed a great deal of turnover among the poor, as events like unemployment and divorce push families into poverty, and reemployment, marriage, and career gains pull them out (Duncan, Corcoran, & Hill, 1984). More than one quarter of the individuals living in poverty in a single year report incomes above the poverty line in the next, and considerably less than one half of those who experience poverty remain persistently poor over many years (Bane & Ellwood, 1986).

On average, children experience 1.8 out of the first 15 years of life in poverty (calculated by Kathleen Ziol-Guest as reported in Magnuson & Votruba-Drzal, 2009; see also Ratcliffe & McKernan, 2012). This average masks considerable heterogeneity (Table 14.1); about 65% of children never experience poverty, whereas 15% of children are poor for at least 5 of 15 years. As with all poverty, persistent poverty is not evenly distributed across ethnic groups. Long-term poverty rates for minority children are especially high, with over one-third of African American children living in persistent poverty (Ratcliffe & McKernan, 2012). African American children are considerably more likely than White children to experience chronic poverty. The average African American child was poor for nearly 5.5 years, whereas the average White child was poor for less than a year. Moreover, only 30% of African American children never experienced poverty compared with 75% of White children. Children born to unmarried mothers and mothers with less than a high school diploma

**TABLE 14.1** Fifteen-year poverty experiences of children in the Panel Study of Income Dynamics born between 1975 and 1987, by race and maternal characteristics at birth

	Average Number of Years Poor	Never Poor	Poor for at Least 5 Years	Poor for at Least 8 Years
Total Sample	1.81	65%	15%	10%
African American	5.53	30%	46%	37%
White	0.93	75%	7%	4%
Unmarried Mother	5.39	24%	46%	33%
Mother Education: < High School Degree	5.03	31%	44%	33%

Notes: Calculations of the Panel Study of Income Dynamics conducted by Kathleen Ziol-Guest, New York University. Figures in this table are based on weights that adjust for differential sampling and response rates.

were also more likely to experience chronic poverty with an average of about 5.4 and 5.0 years spent in poverty during childhood, respectively.

Childhood poverty can also be characterized by the number of poverty spells that are experienced. Most poverty spells are relatively short, ending within 2 years (Gottschalk, McLanahan, & Sandefur, 1994). However, about half of poor individuals who escape poverty, experience another spell of poverty within 4 years (Stevens, 1999). Recurrent poverty spells are also evident among children, more than half of children who are ever experience poverty are poor for more than one spell (Ashworth, Hill, & Walker, 1994). Children who are in poverty for longer periods of time are more likely to experience deep poverty (Ashworth et al., 1994).

U.S. poverty thresholds are not directly applicable in international and comparative work. A common way of measuring poverty in developed countries around the world is to consider the percentage of children or households whose income falls below one-half of the country's median income. Using this metric at the turn of the 21st century, the United States had one of the highest levels of child poverty (over 20%) among developed nations (Heuveline & Weinshenker, 2008). An alternative comparative poverty measure that has been adopted by the World Bank defines global poverty income as income of less than \$2 per day per household member. An examination of 2010 extreme poverty in the United States that did not count the Supplemental Nutrition Assistance Program (SNAP) benefits as income, found that the proportion of poor households with children meeting the World Bank definition was nearly 20% (Shaefer & Edin, 2012). Counting SNAP benefits reduces the estimates of extreme poverty by about half.

## Wealth

Like poverty, wealth is closely related to household income, but somewhat distinct, and typically it focuses attention on

variation among those at the higher end of the income distribution. Wealth is the point-in-time “stock” of a household's financial assets, including both “liquid” (readily accessible) forms such as money in a savings account as well as “illiquid” forms such the net equity tied up in an owned home. Wealth is the *net* amount held in accounts and assets—the difference between the market value of that asset and whatever remaining debt the household owes on that asset. In contrast to income, which consists of a flow of resources over some time period, wealth is a “stock” concept and makes sense only at a distinct point in time.

Assuming no inheritance and a constant return on assets, a family's wealth at any point is the accumulated difference between its past income and past consumption. In other words, if two families have similar income histories but different current levels of wealth, then the family with higher wealth must have saved more of its income. These connections cloud the interpretation of the “effect” of wealth controlling for recent income, because the wealth effect may merely reflect a greater tendency to save income. Of course, our assumptions are also approximations—some families do inherit considerable wealth and some families earn far higher returns on their assets than others.

In 2007, mean net worth in the United States was estimated as \$556,000 and the median \$120,300 (Kennickell, 2009). About 19% of households had zero or negative net worth, the highest level in 24 years (Wolff, 2010). Wealth is highly concentrated among the wealthiest Americans. For example, in 2007 the wealthiest 1% of families held 34% of the total family wealth, with the 9% of families falling below them holding an additional 38%. Families in the lowest 90% of the wealth distribution owned only 29% of total family wealth (Kennickell, 2009). The concentration of wealth is even more pronounced when considering nonhome wealth, 93% of which is held by the wealthiest 20% of Americans (Wolff, 2010). Both the amounts and type of wealth are differentially distributed. The most common assets among poor families are vehicles, whereas homes tend to make up the greatest portion of wealth for

families falling in the middle of the wealth distribution. For the wealthiest Americans, business and financial assets make up the largest proportion of assets.

Income and wealth have a modest positive correlation; there is considerable heterogeneity of wealth within income brackets and vice versa. Using data from the 2007 Survey of Consumer Finances, Kennickell (2009) finds that the most consistent pattern when examining joint distributions of income and wealth is that high income and wealth tend to go together as do very low wealth and income. In between these two extremes, however, the relationship between wealth and income is more diffuse.

### Parental Schooling

Human capital constitutes a second component of SES, and includes the collection of parental skills acquired in both formal and informal ways that are valuable in the labor market and at home (Becker, 1981). Formal schooling is the most familiar and most studied form of human capital, and a large body of literature has demonstrated that obtaining higher levels of education increases a wide range of individuals' academic and cognitive skills as well as their future employment and earnings (Card, 1999). Many longitudinal studies consider parents' education to be fixed during a child's life, and measure it at only one point in time. Yet it has become increasingly common for adults to accrue education in a discontinuous fashion, and to extend their schooling well into adulthood (Astone, Schoen, Ensminger, & Rothert, 2000; Jacobs & Stoner-Eby, 1998). Studies show that attending school during adulthood is particularly common for economically disadvantaged mothers (Rich & Kim, 1999).

Parental education is measured in various ways. Some researchers focus on the highest grade of school completed, which counts years of school attendance even in the absence of obtaining a terminal degree. Others focus on degree completion and distinguish between types of degrees, for example, between vocational and nonvocational degrees. Some also attempt to measure the quality of schooling by assessing, for example, the average achievement level of students within the school or "selectivity" of postsecondary institutions. Focusing on formal education overlooks important skills that are acquired through work experience, including employment-based training, which leads some scholars to characterize job or employment tenure as additional indicators of human capital.

The average education level of Americans has increased dramatically over the past 50 years (Bailey & Dynarski,

2011). Among the most recent cohorts of young adults, nearly two-thirds of individuals have attended at least some college, with over a quarter completing a 4-year college degree. Similar patterns hold for parents. For example, in the early 2000s, about 18% of preschool-age children had mothers with less than a high school education and an additional 24% lived with mothers who had completed only some postsecondary schooling (authors' calculation of the October CPS data).

### Parental Occupation

Human capital also refers to a much broader set of skills than those learned through formal education. Intellectual flexibility as well as verbal communication and decision making skills accumulate throughout a lifetime. In the 1960s and 1970s, social psychologists and sociologists sought to describe how occupations and job characteristics augment or deplete human capital through the life course (Kohn, 1959, 1969; Kohn & Schooler, 1973).

Occupations differ from jobs, in that jobs are specific set of bundled activities and responsibilities, whereas occupations combine roughly similar jobs into a single category. Occupations are a much-studied component of socioeconomic status, with higher-status occupations typically conferring higher earnings, more control, and more prestige on workers holding them (Jencks, Perman, & Rainwater, 1988). Research has focused on occupations as an important aspect of SES because they are closely related to education and earnings and, when compared with single-year income, may better measure a family's "permanent" economic position. On the other hand, considerable research on occupational transitions throughout the life course suggests that career mobility patterns are dynamic (Featherman & Selbee, 1988; Featherman & Spenner, 1988).

Occupational measures of SES include both measures of occupational "prestige" as well as "occupational SES," although some researchers gloss over their differences (Hauser & Warren, 1997). Prestige scales focus on the subjective ranking of occupations whereas Occupational SES scales are typically derived from a weighted sum of the average earnings and education level of particular occupations. The choice of which measure to use is often driven by the specifics of a research question, but Hauser and Warren (1997) argue that when it comes to understanding intergenerational mobility, disaggregated dimensions of occupations, and specifically occupational education, are more useful than indices that combine educational and income features.

Research has found that job conditions appear to shape workers' values and personalities (Kohn, 1959, 1969, 1976; Kohn & Schooler, 1982). High-prestige jobs are characterized by complex tasks and high levels of autonomy. These jobs require self-direction and intellectual flexibility, whereas low-complexity jobs give rise to an orientation toward conformity. Based on correlational evidence, researchers have argued that job conditions shape workers' values and skills on the job and that these generalize to other areas of life (Kohn & Schooler, 1982). Job characteristics also affect employees' cognitive skills and personalities (Menaghan & Parcel, 1991; Parcel & Menaghan, 1994). In particular, low-prestige jobs, with low autonomy, routinized tasks, and little opportunity for "substantively complex work," may erode parents' cognitive skills, whereas high-prestige jobs promote initiative, critical thinking, and decision-making skills.

Other job characteristics have implications for family life as well, including job-related stress and nonstandard work schedules. Job stress encompasses subjective appraisals of interpersonal distress that stem from occupational conditions, such as the workplace social climate, time pressure, job demands, and work/family conflict (Repetti & Wang, 2009). Nonstandard work schedules are commonly defined as work schedules that occur outside the typical daytime hours (6 a.m. to 6 p.m.) or during weekends. Some service and retail jobs combine not only nonstandard hours but also rotating or just-in-time schedules, in which hours of work change from week to week.

In the current labor market, a great deal of attention has been given to the decline of middle class jobs. Yet it is worth understanding that even in the face of differing patterns of growth, most jobs in the U.S. labor market are considered "skilled" jobs. Calculations by Holzer and Lerman (2009) conclude that over half of current jobs are "middle-skill" jobs and another third are "high-skill" jobs as defined by needing some postsecondary or specialized training (Holzer & Lerman, 2009). They do note, however, that some jobs they classify as middle skill may provide low wages and few opportunities for wage advancement, thereby limiting access to resources and amenities that are typically associated with middle class lifestyles.

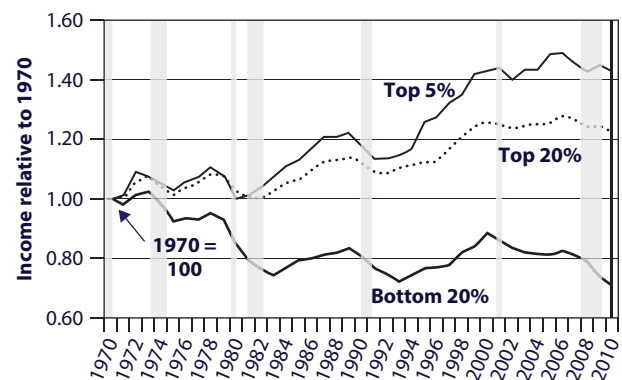
## MACRO TRENDS IN FAMILY SES

Both socioeconomic status and children's developmental outcomes are products of macroeconomic, political, and cultural influences and can change in different ways

over time (Bronfenbrenner, 1986; Hernandez, 1997). In the United States, the secular trends in individual SES components have led to what McLanahan (2004) refers to as "diverging destinies"—a collection of systematic economic experiences that have changed in differing ways for those at the lower and upper ends of the SES spectrum. We provide a brief discussion of these trends and the economic contexts from which they arise. This discussion is primarily focused on the United States, although many of the economic and demographic patterns found in the United States are also evident in other Western nations, to varying degrees (Brandolini & Smeeding, 2009; McCall & Percheski, 2010).

Key among trends has been an increase in economic inequality. While the incomes of lower SES families have stagnated in the United States since the 1970s, the incomes of high-income families have grown considerably, thus widening SES gaps in income. In recent years, the economic rewards of the growing economy have been concentrated primarily among those in society who were already privileged. Consider, for example, the sharply growing income gaps between high- and low-income families beginning in the 1970s. The bottom line in Figure 14.2 shows trends for children in families with incomes that placed them at the 20th percentile of the income distribution. The middle line shows changes at a high-income threshold—children with family incomes above those of 80% of the nation's families. The top line is for children in very-high-income families—those with incomes higher than 95% of U.S. families. To show relative changes, all three sets of incomes are set equal to 100 in 1970.

Even after adjusting for inflation and population growth, the U.S. economy more than doubled in size between 1970



**Figure 14.2** Family income relative to 1970.

Source: Authors' calculations based on data from the Current Population Survey, U.S. Census Bureau.



and 2010. Despite this growth, compared with 1970, the family income of children at the 20th percentile had fallen by 28% in 2011—from about \$37,000 to \$26,000. The depressed economic conditions (shown in shaded areas in Figure 14.2) in the 1970s, early 1980s, 1990s, and 2000s, and the Great Recession which began 2008, all drove income down more than could be offset by the growth periods in between. In contrast, the incomes at the 80th percentile grew by 22%, from \$98,000 to \$121,000, while the incomes of families at the 95th percentile rose even more. The income stagnation of the families at the lower end of the spectrum is reflected in the nation's child poverty rate, which rose sharply from 15.1% in 1970 to about 22% in 2011.

Over the past 20 years, the distribution of wealth has changed as well. Most notably, the share of total wealth held by households falling between the 50th and the 90th percentiles of the wealth distribution fell by about 4%, with households in the top 5% of the wealth distribution absorbing this shift. Between 1989 and 2007, families in the middle of the wealth distribution experienced modest growth, but wealth grew more rapidly for the very wealthiest families (Kennickell, 2009). Since 1983, there has been a slight, but relatively steady increase in the percentage of households with zero or negative net worth, with rates rising from 16% to 19% in 2007 (Wolff, 2010).

What has caused such changes in income and wealth inequality? There are several important underlying factors, and key among these are changes in the labor market and family structure. First, although there has been some overall decline in middle-skill jobs, and greater projected job growth in low- and high-skill jobs, the more important changes in the labor market have occurred with respect to wages (Autor, 2010; Holzer & Lerman, 2009). For the past three decades wages have stagnated for low-skilled workers. The lack of wage growth at the low end of the SES spectrum is even more striking when contrasted with the remarkable growth of wages for high-skilled workers over the same time period. Many theories have been advanced to explain this unprecedented growth in the inequality of earnings: increased demand for highly skilled workers, stagnating minimum wage, immigration of low-skill workers, globalization reducing the number of high-paid manufacturing jobs, and decline of unions (Autor, Katz, & Kearney, 2006, 2008; Borjas, Freeman, Katz, DiNardo, & Abowd, 1997; Juhn, Murphy, & Pierce, 1993; Katz & Autor, 1999; Katz & Murphy, 1992; F. Levy, 1998; F. Levy & Murnane, 1992; F. Levy & Temin, 2007). Of course, earnings (and employment) continue to be affected by

cyclical changes in the overall growth of the economy. The late 1990s economic boom, in particular, provided some boost to workers at the bottom of the distribution, whose earnings rose in real terms for the first time in several decades (Mishel, Bernstein, & Allegretto, 2007). But, following the economic expansion, low-skilled workers still had lower earnings relative to their median in 1979.

Family income growth may have stagnated not only because of job conditions, but also because of patterns of family formation. Since 1960 the percentage of children born to unmarried mothers has nearly doubled from about 20% of all births to nearly 40% in 2006 (Cancian & Reed, 2009). This is because more unmarried women had children, but also because married women had fewer children. Families headed by single mothers experience poverty rates that are 5 times higher than other family structures, and because the rate of nonmarital births is concentrated among low-SES families, all else equal, this trend would contribute to lower income growth at the low end of the SES spectrum (Cancian & Reed, 2009).

At the same time, demographic trends in the United States related to other dimensions of SES have offset the downward pressure on family income. Women have increasingly delayed childbearing, families have gotten smaller, and women's education and employment levels have risen (Cherlin, 2005). In the absence of these changes, growth in inequality might have been much worse. For example, over the past four decades, teenagers have accounted for a decreasing share of women giving birth for the first time (36% in 1970 compared with 21% in 2007). The average age at which women first gave birth in 2007 was 25, compared with 21 in 1970 (U.S. Department of Commerce, 2011). Delays in marriage and childbearing over the past several decades are associated with a reduction of about one child per mother by the end of the childbearing years (U.S. Department of Commerce, 2011). The drop in fertility rates has been especially apparent among non-Hispanic Black women, who saw their rate decrease from 91 births per 1,000 women aged 15 to 44 in 1980 to 67 births per 1,000 women aged 15 to 44 in 2005. Fertility rates among non-Hispanic White women decreased from 62 to 58 (Child Trends Databank, 2006). As a result, families with large numbers of children have become far less common, with a drop in the proportion of families containing four or more children from 17% in 1970 to 6% in 2000 (Lofquist, Lugaila, O'Connell, & Feliz, 2012).

Delayed marriage and childbirth have also been associated with increased educational attainment and employment among women over the past 40 years. Undergraduate

enrollment at colleges grew rapidly in the 1970s, especially for women; correspondingly, the share of women aged 25 to 34 with at least a college degree has more than tripled since 1968, from about 11% to about 35% (U.S. Department of Commerce, 2011). A higher share of women than men completed high school and earned a bachelor's degree in 2009 compared with 1971. Finally, women's employment also increased significantly during this time period and low-skill women experienced greater wage growth than low-skill men. In 1970 about 50% of women aged 30 to 34 worked, but by 1990s this number had risen to nearly 80% (Cancian & Reed, 2009).

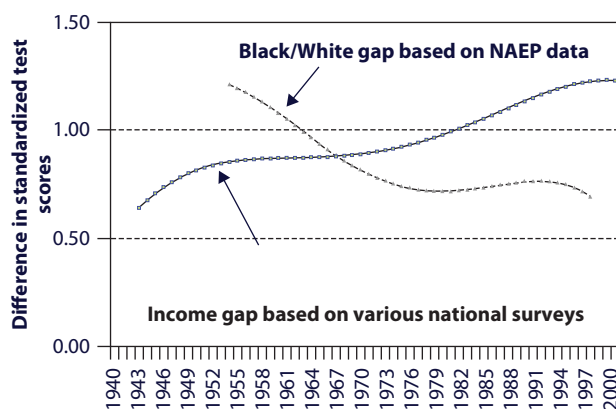
A key question is whether the growing income inequality has affected the developmental fortunes of children, as would be suggested. Reardon (2011) examines this question using data from achievement tests administered to national samples of children over the past 60 years. In interpreting the income-based data, it is helpful to begin with more familiar trends in the Black–White test score gap. Figure 14.3 presents smoothed data based on the National Assessment of Educational Progress—the NAEP. Among children born in the early 1950s, shortly before *Brown v. Board of Education*, Black children scored one and a quarter standard deviations below White children when tested in the ninth grade. Over the next two decades, as the quality of schools attended by Blacks improved, these gaps narrowed—by a remarkable half a standard deviation—but have changed little since then (Magnuson & Waldfogel, 2008).

Income-based gaps have evolved differently. Figure 14.3 also shows gaps in test scores between children at the 10th and 90th percentiles of the family income distribution

(Reardon, 2011). As with the race gaps, the line is smoothed in order to focus on trends. Among children born around 1950, test scores of low-income children lagged behind those of their better-off peers by a little over half a standard deviation. For children born 50 years later, this gap was twice as large. Bearing in mind that middle-school children's achievement grows by between one-quarter and one-third standard deviations per year (Hill, Bloom, Black, & Lipsey, 2008), this implies that in the past 30 years low-income eighth graders have lost more than a year's worth of learning relative to high-income children.

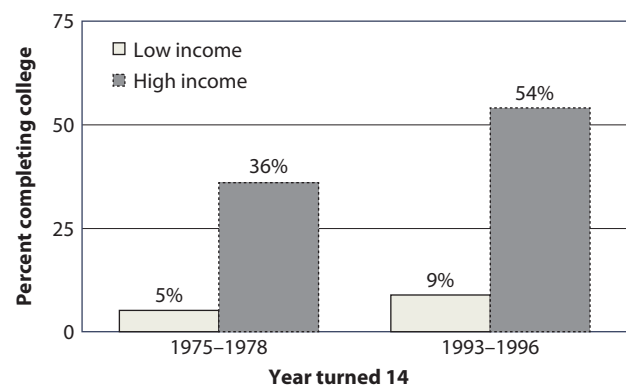
Given the importance of cognitive skills in determining educational success, it is not surprising that there has also been a growing gap in the rate of college completion. Bailey and Dynarski (2011) calculate that the fraction of children raised in affluent families who completed college jumped by 18 percentage points—from slightly more than one third to more than one half—for students entering high school in the mid-1990s relative to their counterparts in the mid-1970s. Among children from low-income families, in contrast, the graduation rate was only 4 percentage points higher for the later cohort than for the earlier one (see Figure 14.4). Among OECD countries, 38% of 25- to 34-year-olds have completed tertiary education (OECD, 2012). Although the U.S. rate (42%) is above this average, it is well below the 68% rate in Korea and below that of 13 other countries as well.

In sum, in the United States, the past four decades have witnessed a simultaneous increase in both family income gaps and income-based achievement and attainment gaps for children. Tempting as it might be to infer causal connections between these income and attainment gaps, it is



**Figure 14.3** Achievement gaps by race and income, by birth year.

Source: Authors' calculations based on data presented in Reardon, 2011.



**Figure 14.4** College graduation rates for low- and high-income children.

Source: Authors' calculations based on data presented in Bailey and Dynarski, 2011.

important to consider how the constellation of changes in family SES and other factors may be involved in the diverging skills of very low- and high-income children. Although the increasing income inequality may be influential, the rising number of children growing up in single-parent households probably matters as well. Single parenthood has risen more quickly among low- than high-SES families and strong associations exist between growing up with a single parent and a host of problematic developmental outcomes (McLanahan & Percheski, 2008). In 1960, about 14% of mothers in the bottom quartile of the education distribution, versus 4% of mothers in the top quartile, were single. By 2000, the percentages were approximately 43% and 7%, respectively. Thus, over four decades, the disparity in single motherhood by socioeconomic background grew from 10 percentage points to 36 percentage points (McLanahan, 2004). On the other hand, increasing parental education and reduced family sizes should have improved more rapidly among low-SES children than their higher SES counterparts. An important next step in this line of inquiry is better understanding how these various facets of social inequality have interacted to affect children's well-being and life chances.

In summary, there have not been uniform trends in household SES in the recent past. Along some SES dimensions, inequality has been increasing. In particular, gaps in household income, wealth, and the prevalence of single-parent families have increased. At the same time, however, gaps in parental education and family size have equalized across the SES spectrum. How this constellation of demographic and economic changes has affected the contexts in which children develop and their life chances is not yet fully understood. Nevertheless, the diverging destinies of low-SES and high-SES children deserve further study and attention (McLanahan, 2004).

## THEORY

Three main theoretical frameworks describe the pathways through which family socioeconomic resources may affect children's development: family and environmental stress, resource and investment, and cultural theories. In this section, we summarize each of these approaches and the type of research questions they generate.

Each framework is grounded in a different disciplinary background and each differs in the extent to which it focuses on socioeconomic status in general rather than a particular component or indicator of SES. In all of these

theories, families and parents are central to the transmission of socioeconomic advantage across generations. The theories differ in the family and developmental processes that are identified as being most important to the intergenerational transmission of SES and in the sources of these differences. Finally, although each of these theories recognizes the role of broader communities play in SES processes, these theories are limited in the extent to which they differentiate SES at the individual level from the broader community or neighborhood context (for a more detailed discussion of neighborhood SES, see Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume). Although developed primarily in the U.S. context, each theory has cross-national and cross-cultural applications. Despite some important points of departure, the three theories can be best understood as overlapping and complementary, in that each perspective generates different types of research questions. Taken together, the larger body of work conveys a more complete understanding than any one standpoint alone.

### Family and Environmental Stress Perspective

The family and environmental stress perspective focuses on how experiences of material scarcity and economic hardship affect parental psychological well-being and cognitive capacities, which in turn negatively affect parenting and then children's development. Although parenting quality is commonly considered the central explanatory process in these models, this perspective is broader and encompasses other sources of environmental stress related to economic hardship that may affect children's stress levels directly, such as pollution, noise, and low-quality housing and neighborhood conditions. This perspective is built on the understanding that experiences of lower quality parenting and stress then are linked to compromised development among children.

According to family and environmental stress perspectives, economically disadvantaged families experience higher levels of stress in their everyday environments, and these disparities in environmental stress may affect development processes. The family stress model was developed first by Elder to document the influence of economic loss during the Great Depression (Elder, 1974; Elder, van Nguyen, & Caspi, 1985, see also Elder, Shanahan, & Jennings, Chapter 2, this *Handbook*, this volume). According to this perspective, poor families face significant economic pressure as they struggle to pay bills, purchase important goods and services, and are forced to cut back on

daily expenditures. This economic pressure, coupled with other stressful life events that are more prevalent in the lives of poor families, create high levels of psychological distress, including depressive and hostile feelings, in poor parents (Kessler & Cleary, 1980; McLeod & Kessler, 1990). Psychological distress spills over into marital and coparenting relationships. As couples struggle to make ends meet, their interactions become more hostile, conflicted, and they tend to withdraw from each other (Brody et al., 1994; Conger & Elder, 1994). Parents' psychological distress and conflict, in turn, are linked with parenting practices that are on average more punitive, harsh, inconsistent, and detached as well as less nurturing, stimulating, and responsive to children's needs. Such lower-quality parenting is likely to elevate children's stress responses, and ultimately harm children's development (Bornstein, Chapter 3, this *Handbook*, this volume; Conger et al., 2002; McLoyd, 1990).

This perspective has been broadened by recent behavioral economic work that argues that conditions of poverty and scarcity not only create psychological distress, but also deplete important cognitive resources, specifically attention processes. Studies primarily in developing countries find that making economic decisions under conditions of scarcity reduces adults' subsequent behavioral self-control, rendering them less able to regulate their own behavior to pursue goals (Mani, Mullainathan, Shafir, & Zhao, 2013; Spears, 2011).

Stressful experiences are typically conceptualized as the result of insufficient income and financial resources, yet they may be exacerbated by the working conditions of low-wage workers. Difficult job conditions, including changing or rotating job schedules, nonstandard hours, and low complexity jobs, characterized by little autonomy, high levels of supervision, and routinized tasks, are associated with higher levels of psychological distress and lower levels of self-esteem, which in turn have negative implications for parent-child interactions (Couter & McHale, 2005; Menaghan & Parcel, 1991; Rapoport & LeBourdais, 2008; Tausig & Fenwick, 2001; Wight, Raley, & Bianchi, 2008).

Extant literature has uncovered associations between job stress and family functioning (for a review, see Repetti, 2005). Job stress spills over into the home environment via compromised parental psychological well-being, diminished marital quality, greater irritability, impatience, and withdrawal in the home environment. All of these factors compromise parenting (Bumpus, Couter, & McHale, 2006; Repetti & Wang, 2009; Repetti & Wood, 1997). On the other hand, higher levels of cognitive skills may buffer

children and families from stresses related to employment by improving parents' problem-solving skills and enabling parents to better meet their family's needs and goals (Johnson, Kalil, & Dunifon, 2012).

Although relationships are central to these stress models, a complete understanding of environmental stress as a pathway incorporates the broader contexts and experiences of low-income children's and family's lives. Compared with their more affluent peers, poor children are more likely to live in housing that is crowded, noisy, and characterized by structural defects (e.g., leaky roof, rodent infestation, inadequate heating) (Evans, 2004; Evans, Saltzman, & Cooperman, 2001). Poor families are more likely to reside in neighborhoods characterized by high rates of crime and neighborhood risk factors, such as boarded-up houses, abandoned lots, and inadequate municipal services (Evans, 2004). The schools that low-SES children attend are more likely to be overcrowded and have structural problems (e.g., with noise, lighting, and ventilation) compared with the schools more affluent children attend (Evans, 2004). Economically disadvantaged children also tend to be exposed to greater air pollution from parental smoking, traffic, and industrial pollution (Evans, 2004). Any one of these environmental conditions may create physiological and emotional stress in the lives of low-income children, which, in turn, may have harmful effects on socioemotional, physical, cognitive, and academic development. For example, childhood poverty heightens children's risk for lead poisoning, which has been linked to health, behavior, and neurological problems that may persist into adolescence and adulthood (Cecil et al., 2008; Shonkoff & Phillips, 2000).

The field of cognitive neuroscience provides related evidence that chronic elevated stress may harm the development of poor children's stress response system, health, and regions of the brain responsible for self-regulation. This perspective also argues for greater attention to the timing of the experiences of poverty and related stress, as early experiences are especially likely to influence brain architecture and neurochemistry, which in turn have implications for learning and health throughout the life span (Knudsen, Heckman, Cameron, & Shonkoff, 2006). Researchers have documented the harmful effects of stress on animal brain development. Stress exposure and the elevation of stress hormones, such as cortisol, negatively influences animals' cognitive functioning, leading to impairments in brain structures such as the hippocampus, which is of central importance for memory (McEwen, 2000).

For obvious ethical reasons, these studies have not been replicated in humans. However, nonexperimental studies



have found low-SES children do have significantly higher levels of stress hormones than their more advantaged counterparts (Lupien, King, Meaney, & McEwen, 2001; R. J. Turner & Avison, 2003) and that early childhood poverty is associated with increased allostatic load, a measure of physiological stress. These increased levels of physiological stress have been linked to both cognitive functioning as well as immunological functioning, which has long-term implications for inflammatory diseases later in life (Chen & Miller, 2013). Specifically, recent work has linked the hypothalamic-pituitary-adrenal (HPA) axis to the functioning of the prefrontal cortex and related cognitive skills, such as executive functioning and self-regulation. Recent work by Blair et al. (2011) has found that heightened salivary cortisol, and indicators of elevated stress response system, partially accounts for the association between poverty and parenting on young children's executive functioning. Thus, disparities in stress exposure and stress hormones may partially explain why poor children have lower levels of cognitive ability and achievement and higher rates of poor health later in life (Farah et al., 2006). Although this explanation is compelling, and evidence is accumulating, to date studies have not established a clear causal sequencing of these associations or isolated the role of SES per se in these processes.

In summary, the family and economic stress perspective focuses on how conditions of low family income, economic hardship, and low-wage work generate psychological distress and physiological stress. Experiences of stress negatively affect the quality of family relationships, and specifically reduce the quality of parenting that children receive. Recent behavioral economics work has also argued that the conditions of scarcity affect adult's cognitive self-control by reducing their attention to other matters. Considerable work has found that the basic associations proposed by these theories hold across diverse contexts and populations (Conger et al., 2002; McLoyd, 1990). Current theoretical work is focusing on greater specificity on how low-quality parenting and stress affects individual developmental processes and cognitive functioning. An important next step will be to think about how responses and experiences of economic hardship and scarcity are related to other possible mechanisms by which SES advantages are transmitted across generations. For example, this theoretical model clearly better explains differences in development between poor and nonpoor families, but would appear to be less compelling an explanation of differences between

children in middle- and upper-middle-income families, for whom economic hardship is not prevalent.

### Resource and Investment Perspective

The resource and investment approach differs from other approaches in that it focuses on the ways in which SES resources can buy or create material goods and experiences that enhance children's development. The origin of this perspective is in economics, specifically household production theory. Becker's (1981) *A Treatise on the Family* posits that child development is "produced" from a combination of endowments and parental investments. Endowments include genetic predispositions and the values and preferences that parents instill in their children. Parents' preferences, such as the importance they place on education and their orientation toward the future, combined with their resources, shape parental investments.

Economists argue that time and money are the two basic resources that parents invest in their children. Because these resources differ markedly across the SES distribution, this theory suggests that such differential investments explain SES differences in children's development. For example, investments in high-quality childcare and education, housing in good neighborhoods, and rich learning experiences enhance children's development, as do nonmonetary investments of parents' time.

Links between endowments, investments, and development likely differ by the domain of development (e.g., achievement, behavior, health) under consideration. Characteristics of children also affect the level and type of investments that parents make in their children (Becker, 1981; Foster, 2002). For example, if a young child is talkative and enthusiastic about learning, parents are more likely to purchase children's books or take the child to the library (Raikes et al., 2006). Indeed, one of the more important insights from this model is that parental investments are likely to differ across children, in part, because children need and benefit from different things, be it experiences or goods.

Household production theory suggests that children from poor families lag behind their economically advantaged counterparts because their parents have fewer resources to invest in their children (Becker, 1981). Compared with more affluent parents, poor parents are less able to purchase inputs for their children, including books and educational materials at home, high-quality childcare

settings and schools, and safe neighborhoods. Economically disadvantaged parents may also have less time to invest in children, due to higher rates of single-parent families, nonstandard work hours, and less flexible work schedules (Smolensky & Gootman, 2003). This too may have negative consequences for children.

An obvious advantage of a higher family income is that it provides more resources to buy books, computers, high-quality childcare, summer camps, private school tuition, and other enrichments (Kaushal, Magnuson, & Waldfogel, 2011). Forty years ago, low-income families spent about \$850 (in 2011 dollars) per year on variety of possible child enrichment expenditures, while higher-income families spent more than \$3,500, already a substantial difference (see Figure 14.5). By 2005–2006, low-income families had increased their expenditures to over \$1,300 (in 2011 dollars), but high-income families had increased theirs much more, to more than \$9,000 per child. The differences in spending between the two groups had almost tripled in the intervening years. The largest spending differences were for activities such as music lessons, travel, and summer camps. Differences in parental expenditures on child investments are also found by maternal education, though these differences likely reflect the differing economic standing of more or less highly educated parents.

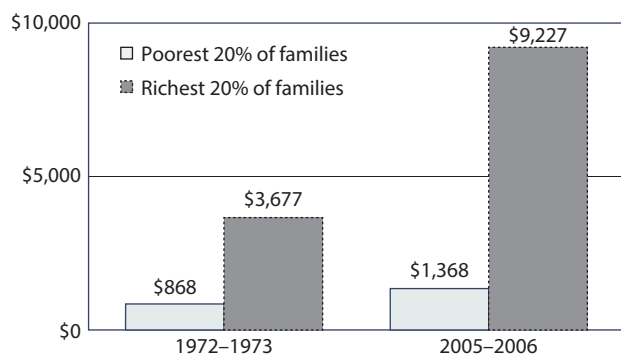
The provision of cognitively stimulating and enriching home environments reflects familial investments of time and money into the materials and experiences that promote learning. Children from poor households tend to experience lower quality home environments than advantaged peers and these differences, in turn, explain some of the influence of poverty on child educational

achievement (Duncan & Brooks-Gunn, 2000). It is perhaps not surprising that home environments play such a central role in explaining poverty's effects, given the well-established effects of environmental enrichment on the structure and functioning of the brains of animals (van Praag, Kempermann, & Gage, 2000). Disparities in the cognitive development of low- and middle-SES children are most pronounced in brain regions that are important for language, memory, and cognitive control (Farah et al., 2006; Noble, McCandliss, & Farah, 2007). These differences may, in part, stem from differences in exposure to enriching environments and corresponding effects on brain development (Farah et al., 2008).

Studies of parental time use provide strong evidence that maternal education also shapes investments in children. Guryan, Hurst, and Kearney (2008) documented the educational gradient in parents' care for their children. Despite also spending more hours working outside of the home, more highly educated mothers spent approximately 4.5 more hours a week than less educated mothers directly caring for their children. SES predicts not only the time that mothers care for their children, but also the developmental quality of that time. More highly educated mothers engaged in more developmentally appropriate care of their children, spending more time in play with younger children and more time in child management tasks for older children (Kalil, Ryan, & Corey, 2012).

Other studies also suggest that parents with higher levels of education promote their children's achievement by holding higher expectations for their children, providing more stimulating learning materials and activities, engaging in higher quality instruction, using more varied and complex language and speech patterns, as well as by supporting their children's learning (Davis-Kean, 2005; Hoff, 2003; Raviv, Kessenich, & Morrison, 2004; Richman, Miller, & Levine, 1992). Finally, how mothers allocate their time also seems to depend on children's characteristics. More highly educated mothers spend more total time and more educationally oriented time with lower birth weight compared to higher-birth-weight children, whereas less educated mothers spend more time with higher- than lower-birth-weight children (Hsin, 2012). The compensating effects of more highly educated families are substantially larger than the reinforcing effects in low-education families (Hsin, 2012).

The SES resource and investment perspective focuses attention on the instrumental nature of SES resources and how parents deploy them to the benefit their children.



**Figure 14.5** Enrichment expenditures on children.

Source: Authors' calculations based on data presented in Duncan and Murnane, 2011.

In particular, this perspective highlights the potential of research to fail to find one explanatory mechanism that will account for the full effect of higher SES on children's development, because these explanations may be as diverse as parents' resource use. Nevertheless, some general patterns suggest that parents' investment of time and money in experiences and activities that are cognitively stimulating and enriching are one pathway by which SES affects children.

Current theoretical work focuses on better understanding how parents' investments interact with children's own skills and traits and investments from other contexts to affect development. Compared with the family and environmental stress perspectives, this approach is better able to explain differences in children's outcomes across the entire SES spectrum, as differences in development are attributed to parents' differential levels of investments. Most empirical efforts to test the family stress and family investment perspectives have conceptualized them as competing explanatory pathways to be parsed out, but more attention should be given to how they may interact and synergistically affect family and individual developmental processes.

### Cultural Perspectives

Sociological and anthropological approaches to explaining SES-based differences in children's development focus primarily on a more complete understanding of why family and community patterns of behavior differ. Though they share this focus with other theoretical perspectives, the cultural perspectives argue that differences in aspects of culture are central to understanding SES differences in parenting practices and parental investment (Lamont & Small, 2008). Early cultural perspectives emphasized socioeconomic variability in norms, values, and behaviors that were shared by individuals with similar SES, whereas more recent perspectives draw on a broader range of cultural constructs to explain heterogeneity in behaviors within and across groups based on SES. Given the cultural and behavioral emphasis of these perspectives, there is a tendency to focus on SES as a unidimensional concept of social standing or social class, although the most recent work in this area aims to identify dimensions of culture that explain heterogeneous responses and outcomes to the same material and economic conditions (Small, Harding, & Lamont, 2010).

Sociological theories about how the norms and behavior of the poor affect children began with the "culture of poverty"

theory put forth by Lewis (1969). Based on his fieldwork with poor families in Latin America, he argued that the poor were economically marginalized and had no opportunity for upward mobility. Individuals responded to their marginalized position by adapting their norms and values, which guide behavior. The resulting culture of poverty was unitary and shared by members of the marginalized group. It was characterized by little impulse control and inability to delay gratification, as well as feelings of helplessness and inferiority. These adaptations manifested in high levels of female-headed households, sexual promiscuity, crime, and gangs. Although Lewis (1969) acknowledged that these behaviors emerged in response to structural factors, he argued that over time, these shared values and behaviors were transmitted to future generations, and therefore became causes of poverty. He writes: By the time slum children are age six or seven they have usually absorbed the basic values and attitudes of their subculture and are not psychologically geared to take full advantage of changing conditions or increased opportunities. (Lewis, 1966, p. xlv)

Cultural explanations for the effects of poverty on children were prevalent in the mid-1980s through the 1990s and continued to be grounded in the notion that poor families shared norms, beliefs, and behaviors that differed from those shared by middle- and upper-income families and placed them at a distinct disadvantage. These aspects of culture were found across multiple generations and thus supported an intergenerational transmission of poverty. Behaviors associated with cultural perspectives during this time include high levels of nonmarital childbearing, joblessness, female-headed households, criminal activity, and welfare dependency among the poor.

Theorists tended to agree that behavioral differences exist, but they disagreed on the origins of these differences. For example, Mead (1986) emphasized the role of individual characteristics and the liberal welfare state's perverse incentives that reward single-mother households and joblessness among men. Massey (1990) and Wilson (1987, 1996) stressed the importance of structural and economic factors: the concentration of neighborhood poverty, the social isolation of poor inner city neighborhoods, and the deindustrialization of urban economies. They contended that these structural factors negatively influence the behavior of inner-city adults and their children.

These early notions of a culture of poverty have come under fire for several reasons. First, these perspectives are often criticized for the basic assumption that differences in norms and values drive differences in behavior (Lamont & Small, 2008). Evidence suggests that disadvantaged individuals hold many middle class values and beliefs.

However, unlike the middle class, circumstances make it difficult for the poor to behave in accordance with their values and beliefs. For example, Edin and Kefalas (2005) show that poor women value marriage and recognize the benefits of raising children in a two-parent household. However, their low wages as well as Black men's high rates of unemployment and incarceration lead poor women to conclude marriage is out of their reach. Traditional notions of a culture of poverty do not account for this sort of disconnect between values and behaviors.

Today, cultural sociologists generally reject the notion that a unitary set of norms, values, and behaviors (culture) shared by economically disadvantaged families can explain disparities in children's development. Instead, sociologists have developed increasingly sophisticated approaches to examine the intersection of culture and poverty drawing on cultural concepts, including repertoires, frames, narratives, as well as social and cultural capital, to understand how poor adults experience, perceive, and respond to their economic position (Lamont & Small, 2008; Small et al., 2010).

From this new approach emerges a portrayal of the heterogeneity that characterizes individual responses to socioeconomic disadvantage. For example, Small (2004) highlighted variability in community involvement among low-income Latino/a residents of a housing project in Boston. He found that differences in cognitive framing of the neighborhood were central to explaining this heterogeneity. In particular, residents who talked about the neighborhood as a housing project tended to show low levels of community involvement, whereas those who recognized the neighborhood as a community with a shared history of social and political involvement tended to continue this tradition by taking part in community activities.

Among cultural approaches, some seminal work in the field explicitly focused on understanding childrearing. Early research focused on the occupational conditions faced by workers suggests that differences in occupational complexity may contribute to the variability in childrearing values, beliefs, and behaviors seen between middle- and low-income families. It suggests that parents tend to socialize their children in ways that emphasize the values and behaviors that are effective in their own workplace (Kohn, 1976; Parcel & Menaghan, 1994). Middle-class workers in higher complexity jobs are more likely to stress self-direction, autonomy, flexibility, and reasoning in their child rearing practices (Lareau, 2003). In contrast, parents in low-complexity occupations tend to emphasize conformity to rules, constraint, discipline, and control

(Luster, Rhoades, & Haas, 1989). These differences in values give rise to variability in parenting practices that may have implications for children's development. Yet, work by Weininger and Lareau (2009) points out that this description is complicated by the fact that, whereas middle-class parents try to instill self-direction in their children, they nonetheless exert subtle forms of control. Likewise, although working-class and poor parents command conformity from their children, they also provide their children with large amounts of autonomy in some aspects of their lives.

Lareau (2003) identifies other differences in cultural childrearing repertoires of high- and low-income families, including the degree to which middle-class parents "managed" their children's lives, whereas working-class and poor parents left children alone to play and otherwise organize what they did. She summarizes her findings as follows:

In the middle class, life was hectic. Parents were racing around from one activity to another. In families with more than one child, parents often juggled conflicts between children's activities. . . . Because there were so many activities, and because they were accorded such importance, child's activities determined the schedule for the entire family. . . . [In contrast], the limited economic resources available to working class and poor families make getting children fed, clothed, sheltered and transported time-consuming and tedious. Parents tend to direct their efforts toward keeping children safe, enforcing discipline, and, when they deem it necessary, regulating their behavior in certain areas. . . . Thus, whereas middle-class children are often treated as a project to be developed, working class and poor children are given boundaries for their behavior and then allowed to grow. (pp. 35, 66–67)

Lareau calls the middle class patterns "concerted cultivation," which involves the provision of stimulating learning activities and social interactions that parents believe will promote their children's social and cognitive development. According to this approach to child rearing, children's skills are projects to be managed, built, and honed through focused parental efforts. In contrast, the "natural growth" perspective of working-class and poor parents often stops at providing basic supports (e.g., food, shelter, comfort). These differences in cultural repertoires provide a distinct advantage to middle-class children as the skills they develop are valued by institutions they experience, such as schools and work places, and this in turn contributes to the intergenerational transmission of social class.



A growing body of quantitative research has tested Lareau's findings. Roksa and Potter (2011) identify social class variation in the use of parenting practices, including concerted cultivation, but do not find parenting behaviors to be exclusive to any particular class. Other researchers have explored whether concerted cultivation is associated with better child outcomes. Two studies have suggested that indicators of Lareau's idea of "concerted cultivation" are linked with academic advantage in kindergarten and subsequently through third grade. So while distinctive patterns of parenting have been identified that are linked to children's achievement, questions still remain about the extent to which patterns are distinct across SES and shared within SES.

Beyond a family's own SES, the SES of prior generations may also be important in shaping family processes, evidence suggests. This has been considered most directly in discussions of how African American middle-class families compare to White middle-class families. In particular, it is argued that although African American families may have similar levels of income and parental education, these parents are often the first of their families to have achieved such status (Hardaway & McLoyd, 2009). The SES of prior generations may be important in shaping family and social networks such that families who have been of lower SES for generations are likely to be embedded in social networks that are more economically heterogeneous (Heflin & Pattillo, 2006), and thus may transmit fewer advantages to their children. The importance of generational SES has not been studied extensively, in part because of the difficulty of collecting the necessary data, but studies suggest a small to moderate prediction from grandparents' education to their grandchildren's academic skills, holding constant parents' SES (Ferguson & Ready, 2011; Phillips, Brooks-Gunn, Duncan, Klebanov, & Crane, 1998).

Cultural and sociological approaches have been important for understanding how structural and social conditions interact to affect individuals' behaviors. Focusing on holistic conceptualizations of SES rather than particular SES dimensions, these approaches have described how patterns of behavior are organized differently across the SES continuum. Whereas early work discussed unified cultural beliefs and behaviors that perpetuated the very poverty that gave rise to it, new scholarship rejects the notion of a unified culture, and does not conceptualize behavior as derived primarily from values. This work complements and rounds out other theoretical approaches by drawing attention to the fact that responses to economic conditions, and more generally one's social standing and strategies of coping with it, are

socially constructed and thus involve cultural repertoires, frames, narratives, as well as social and cultural capital as found in social networks. Thus this approach offers one means to understand differential responses to similar economic resources and social positions, and infuses an important emphasis on social processes, rather than only individual or intrafamilial processes.

## CORRELATION AND CAUSATION IN STUDIES OF FAMILY SES AND CHILD WELL-BEING

Researchers seeking to identify the causal influences of family SES face formidable challenges. They must take seriously threats to internal validity from a variety of sources, including bias from simultaneous causation and potential omitted variables (Sobel, 1998). Duncan (2006) describes a continuum for evaluating the methodological rigor of studies aimed at estimating poverty and income's influence on child development. On one end are correlational studies that analyze associations between concurrent measures of family income and child outcomes, with few adjustments for confounding factors. These studies are common, but likely plagued by biases. On the other end are experiments in which families are randomly assigned to receive additional income, without any strings attached. If implemented correctly, experiments provide unbiased estimates of income effects, but such studies are exceptionally rare. Between these two extremes, ranging from less to more rigorous, are natural experiments, studies that employ econometric techniques to reduce omitted variable bias (e.g., fixed effects, instrumental variables regression), and longitudinal studies. We describe these common problems in studying SES and children's outcomes, and then provide a brief description of research methods and analytic statistical approaches that provide more rigorous evidence of the effects of SES on children (see also Duncan, Magnuson, & Ludwig, 2004).

### Simultaneity Bias

Despite the abundance of research documenting correlations between family socioeconomic status and outcomes, it is difficult to determine whether these outcomes are consequences or causes of low family income. For example, consistent associations have been found between childhood poverty and a wide range of health outcomes (Case, Lubotsky, & Paxson, 2002; Currie & Stabile, 2003). At the same time, mothers of children who have poor health

status are less likely to be involved in the paid labor force, tend to work fewer hours, and have a greater likelihood of experiencing job loss (Earle & Heymann, 2002; Gould, 2004; Kuhlthau & Perrin, 2001; Powers, 2001, 2003). Did the family poverty cause the poor child health or did emerging child health problems limit family income? Researchers face considerable challenges in ruling out this type of simultaneity bias, with the failure to do so resulting in an overestimation of poverty's effects.

### Omitted Variable Bias

A second challenge involves isolating the effects of socioeconomic status from other disadvantages that poor families face. A first issue is that socioeconomic characteristics tend to cluster together, so that children who live in poverty are likely to have parents with lower levels of education, which makes it difficult to isolate the unique influence of any one indicator of SES. A second problem is that family income or low parental education are linked with several other family circumstances such as greater prevalence of single-parent families, low levels of parents' cognitive skills, and poor parental mental health. Each of these factors may have an independent negative effect on children. Thus, to ascribe a causal effect to poverty or parental education requires ruling out other explanations for the associations between socioeconomic factors and children's development.

Some researchers have argued that income effects are largely the spurious result of unmeasured differences that are correlated both with SES and child outcomes (Mayer, 1997). In other words, unmeasured characteristics such as parental mental health or motivation that contribute to greater education and earnings may also enhance child development, leading to a spurious correlation between SES and child development. This threat of omitted variable bias is an important concern in most nonexperimental research. Studies that use rigorous statistical techniques to address bias issues tend to uncover smaller effect sizes than studies that do not (Duncan, 2006; Holmlund, Lindahl, & Plug, 2011).

Some researchers argue that attempting to isolate the causal effects of one dimension of SES, in particular income, is misguided because it is difficult to know the extent to which related disadvantages, such as low levels of education or mental health, are themselves caused by income (Gershoff, Aber, & Raver, 2003). In this view, parsing out the effects of a particular dimension of SES from other dimensions of advantage or disadvantage is

likely to present a distorted or incomplete view of the extent to which SES and economic disadvantage affect children. Though these indicators are strongly related, they are affected by different policies and may operate to affect differing family processes, and potentially different domains of child well-being. Thus, while it is important to recognize that parental income and education are closely related, it is also valuable to understand the unique contribution of each dimension of family SES.

### Random Assignment Experiments

Although there are no fail-proof methods to generate unbiased estimates of family SES on children, some studies are able to minimize the threats of bias by using research designs that eliminate or reduce simultaneity and omitted variable biases. The most rigorous approach to these problems is reliance on data gathered in an experiment in which families are randomly assigned to some kind of SES-improving program. Income supplementation is the most obvious kind of experimental SES manipulation, although one could also imagine assigning parents to opportunities to complete more schooling. Although experiments can suffer from problems of generalizability, such as Hawthorne effects (Shadish, Cook, & Campbell, 2002), their virtue is that they eliminate omitted variable bias by forcing their treatment and control groups to have virtually identical measured and unmeasured characteristics.

### Change Models

Lacking experiments, researchers seeking to identify the causal influences of child SES face formidable challenges. One potentially useful approach is to use longitudinal data to estimate change models. Suppose one has reason to believe that SES effects on a given child outcome occur quite quickly. With longitudinal data on SES and child outcomes, one might be able to relate *changes* in child outcomes to *changes* in family SES. The equation-based intuition behind this approach is shown in Equation 14.1, where child *i*'s outcome in period *t*,  $y_{it}$ , is a function of family SES effects in that period ( $SES_{it}$ ), unmeasured parent and child variables that are constant over time ( $par_i$  and  $child_i$ ), and unmeasured variables that vary over time ( $par_{it}$  and  $child_{it}$ ), and an error term ( $e_{it}$ ):

$$y_{it} = \beta SES_{it} + par_i + child_i + par_{it} + child_{it} + e_{it} \quad (14.1)$$

In this case, unmeasured parent and child characteristics will bias estimates of  $\beta$  to the extent that they are correlated with both *SES* and *y*. To avoid these sources of bias, one can first-difference the data, a procedure in which each child's observation in period *t* is subtracted from his or her observation in period *t* + 1. These are sometimes called individual fixed-effects models. Subtracting Equation 14.1 at time *t* + 1 from Equation 14.1 at time *t* eliminates the biasing effects of time-invariant parent- and individual-level unmeasured variables from the right-hand side of the regression equation.

Fixed-effects models are still subject to bias from time-varying parent or child-level unmeasured variables, because first-differencing does not eliminate these variables from the estimating equation. However, with sufficiently long panels, more elaborate methods may be used to control for unmeasured variables whose values change over time in specific ways. For example, looking at how changes in the rate at which family or contextual variables change affect the rate at which children's outcomes change (obtained by twice-differencing the data) can help control for unmeasured parent or child-level variables that change over time at a constant rate. All of these change models rely on the assumption of short-run SES impacts.

### Within-Family Variation

Another set of methods for reducing bias exploit within-family variation. Sibling models (sometimes referred to as family fixed-effects models) provide an example of using within-family variability to eliminate bias, in this case from omitted parental (*par<sub>i</sub>*) factors. In these approaches, each sibling's score on the dependent and independent variables is subtracted from the average scores of all siblings in his or her family. In the case of two siblings per family, the deviation-from-family-means model becomes a simple sibling-difference model. If we replace the subscript *i* in Equation 14.1 with 1 (for Sibling 1) and 2 (for Sibling 2), and assume that there is sufficient cross-sibling variability in family and contextual conditions to reference *SES* with the sibling subscripts, the sibling-difference model takes the following form:

$$y_2 - y_1 = \beta(SES_2 - SES_1) + (par_2 - par_1) + (child_2 - child_1) + (e_2 - e_1) \quad (14.2)$$

In estimating this regression model, sibling differences in the outcome of interest are regressed onto sibling differences in observed family and contextual characteristics. Note that coefficient  $\beta$  has an identical interpretation in

Equations 14.1 and 14.2; both reflect changes in outcomes associated with key changes in SES. Observed parental factors that are the same for all siblings in a family are differenced out of a sibling difference regression.

A key advantage of sibling models is that persistent *unobserved* elements of *par<sub>i</sub>* are differenced out as well, thus eliminating the omitted-variable bias caused by the unmeasured persistent family factors shared by siblings. The sibling-difference model thus “automatically” eliminates bias from all permanent family factors, observed or not, if the effects of these factors do not differ between siblings. Time-varying family factors, especially those that might be producing the sibling differences in the context (e.g., divorce, income changes), are a potential source of bias in Equation 14.2 and should be controlled explicitly in the regression if possible. A disadvantage of sibling models is that change measures are more often error ridden than level measures, which can bias parameter estimates toward zero. In order for the model to work, SES has to vary sufficiently between siblings to support the estimation of  $\beta$ .

### Natural Experiments

Another alternative to random assignment is to generate estimates of the causal effects of SES on child outcomes with “natural experiments.” In this case, one wants some kind of event that generates changes in income that are beyond the control of the families and children under investigation. Though the change to SES is not randomly assigned, the event that brings it about may be as good as randomly distributed across those observed in the study. Often these studies exploit variation over time, sometimes within the same families, other times across similar cohorts of families. One example included in the following section consists of income increases generated by increases in the generosity of the U.S. Earned Income Tax Credit program in the mid-1990s (Dahl & Lochner, 2012) and the Canadian Child Benefit program around 2000 (Milligan & Stabile, 2011). Tracking changes in child well-being before and after the changes among eligible families can generate estimates of income effects that are not biased by the kinds of parent and child measures included in Equation 14.1. More details on these studies are provided below.

### Instrumental Variables

A strong, although often difficult to implement, approach to causal inference is instrumental variables. Consider Equation 14.1 and its implied task of producing unbiased estimates of the effects of family SES on child outcomes.

Suppose we can find some variable—call it  $Z$ —that affects family SES but only affects child outcomes by operating through family SES. In this case, a two-stage estimation procedure can be employed to generate unbiased estimates of SES impacts. In the first stage, family SES is regressed on  $Z$  and the estimated regression coefficient is used to generate predicted levels of family SES based on  $Z$ . In the second stage, a regression like Equation 14.1 is estimated, but instead of including  $SES_{it}$  one uses the *predicted value* of  $SES_{it}$  generated from the first stage. Because SES variation in this case is generated completely by  $Z$  rather than any potentially confounding influence on SES arising from omitted family- or child-specific characteristics, the coefficient estimated on SES in the second stage should be free from omitted-variable bias. The challenge with instrumental variables is in finding an appropriate  $Z$  variable (Gennetian, Magnuson, & Morris, 2008). This method is sometimes used in combination with random assignment studies and with natural experiments, and we describe in our literature review several studies that use instrumental variables in the context of experimental work support programs to estimate the effects of increased family income on children.

## EMPIRICAL RESEARCH ON THE EFFECT OF FAMILY SES ON CHILDREN

Despite these challenges of identifying causal connections between SES and child development, empirical research on this subject is abundant. In the following sections we focus on the research that links each component of family SES to children's outcomes during childhood as well as in adulthood, primarily in the U.S. context but also in nations with similar SES contexts. Given the difficulty of identifying causal effects in many research studies, we highlight the most rigorous studies available. For both family income and parental schooling we organize our reviews by developmental outcome, and then provide detail when available about moderating factors such as developmental age when clear patterns emerge in the literature. For parental occupation, we organize our review around the dimension of occupation being studied, because these are more varied and this structure better characterizes the current knowledge base.

### Income, Poverty, and Wealth

Of the three SES components, the effects of family income and poverty on children have been researched most

thoroughly. Numerous studies provide correlational evidence, but a far smaller set of studies use rigorous research designs that increase confidence that the effects are plausibly causal. However, these designs also isolate the effects of income and poverty from other dimensions of SES, and thus do not provide a full picture of how SES affects children. The family stress model argues that poverty in particular may compromise development, and much of the research has taken this perspective. Yet the investment theory suggests that increments to income among middle class and upper class families may also benefit children, and some studies look more broadly at the full income distribution. Most studies focus on children only during childhood, rather than being able to follow them later into the life course. Unfortunately, important theoretical questions about whether some periods of development are more sensitive to income and poverty cannot be answered without such long-run studies. Nevertheless, accumulating evidence suggests that poverty has a causal effect on children's achievement and educational attainment. Less clear are whether income more generally has a causal effect, and the extent to which poverty and income are causally connected to behavior and health.

### *Academic Achievement and Human Capital Attainment*

Income gaps in achievement are present when children enter school and persist during the school years (Magnuson, Waldfogel, & Washbrook, 2012). The magnitude of the gaps between children at the bottom and top fifths of the income distribution are over a standard deviation. Differences between the performance of groups of poor and nonpoor children differ across studies and measures, but typically amounts to about one-third of a standard deviation (Blau, 1999; Smith, Brooks-Gunn, & Klebanov, 1997). Associations with educational attainment are larger, with the mean differences amounting to over a year of schooling (Duncan, Kalil, & Ziol-Guest, 2008). Differential rates in high school completion and college attendance are also large—poor children are one third as likely to complete high school (Corcoran, 2001), and the gap in college attendance between the lowest quintile and highest income quintiles is nearly 50 percentage points (Haveman & Wilson, 2007). Simple associations between income early in life and adult outcomes are striking. Compared with children whose families had incomes of at least twice the poverty line during their early childhood, poor children earn less than half as much, and work 451 fewer hours per year in adulthood (Duncan, Ziol-Guest, & Kalil, 2010).

Despite theoretical predictions and correlational evidence, the extent to which family income and poverty



are causal determinants of children's achievement and education behavior remains a controversial issue. The only large-scale randomized interventions to alter family income directly were the U.S. Negative Income Tax Experiments, which were conducted between 1968 and 1982 with the primary goal of identifying the influence of guaranteed income on parents' labor force participation. Maynard and Murnane (1979) found that elementary schoolchildren in the Gary, Indiana, experimental group (whose families enjoyed a 50% boost in family income from the program), exhibited higher levels of academic achievement and school attendance than the control group. No test score differences were found for adolescents, although youth in the experimental group did have higher rates of high school completion and educational attainment than controls. Maynard (1977) analyzed data from two rural sites—in North Carolina and Iowa—and found test score gains for second through eighth graders in North Carolina but not Iowa. Collectively these results provide some support for the hypothesis that higher income may indeed cause higher achievement in middle childhood, although even in this case it is impossible to distinguish the effects of income from the possible benefits to children from the reductions in parental work effort that accompanied the income increases.

Providing income support to working poor parents through wage supplements has been shown to improve children's achievement, according to data from experimental welfare reform evaluation studies undertaken during the 1990s. One study analyzed data from seven random-assignment welfare and antipoverty policies, all of which increased parental employment, while only some increased family income (Morris, Duncan, & Clark-Kauffman, 2005). Though leveraging experimental data, the analysis itself is not an experiment because families were not randomly assigned across types of treatments. Preschool and elementary schoolchildren's academic achievement was improved by programs that boosted both income and parental employment, but not by programs that only increased employment. The school achievement of adolescents did not appear to benefit from either kind of program. A separate analysis of the data on younger children suggests that a \$3,000 annual income boost is associated with about one fifth of a standard deviation gain in achievement test scores (Duncan, Morris, & Rodrigues, 2011). These findings suggest that income may play a causal role in younger children's achievement, although it should be kept in mind that the beneficial welfare reform programs increased both income and parental employment. Combining these

results with those from the 1970s experiments reviewed earlier, it is apparent that income effects on younger children's achievement emerge when policies increase parental employment as well as when they decrease employment. This suggests that the income boost may have been the most active ingredient in the beneficial impacts.

A set of experimental studies conducted in developing countries and recently implemented in New York City tested the effects of delivering cash assistance through payments that depend on the behaviors of parents and children. Such conditional cash transfer (CCT) programs have been implemented in a number of countries in the developing world. Mexico pioneered this movement, with a program originally called *Progres*a and now known as *Oportunidades*. This program provides direct cash payments that are conditioned in part on children remaining in school and in part on families seeking preventive health care and adopting certain child nutrition practices (S. Levy, 2006). Although poor households in the program did make more use of health and education services, the evidence on improvements for education outcomes is more mixed (Fiszbein, Schady, & Ferreira, 2009). For example, school enrollment improved but achievement test scores did not.

*Oportunidades* inspired New York City's Family Rewards program, which operated in the city's highest-poverty communities. It tied cash rewards to activities and outcomes related to children's education, families' preventive health care, and parents' employment. Results, all of which related to school-aged children, were mixed. The program reduced poverty and hardship and increased savings but did not improve school attendance or achievement overall for its elementary and middle school students (Riccio et al., 2013).

Moving beyond these CCT programs, convincing evidence of the relation between income and child achievement comes from studies employing instrumental variable and natural experiment approaches. One such study, mentioned previously, took advantage of the fact that between 1993 and 1997, the maximum U.S. Earned Income Tax Credit for working poor families increased by more than \$2,000 for a family with two children (Dahl & Lochner, 2012). This generous increase in tax benefits enabled the authors to compare the school achievement of children before and after the increase in the tax credit. They found improvements in low-income children's achievement in middle childhood that coincided with the policy change. A second, Canada-based study found similar results when it took advantage of variation across Canadian provinces in the generosity of the National Child Benefit program to

estimate income impacts on child achievement (Milligan & Stabile, 2011).

These rigorous studies of achievement are more sophisticated than the long line of longitudinal studies that preceded them. Noteworthy examples of the latter include (a) the Duncan and Brooks-Gunn (1997) coordinated analyses of researchers working with 10 different longitudinal data sets seeking to isolate the effects of permanent income from other SES components using covariates; (b) Mayer's (1997) novel longitudinal study design using income measured later in life as a proxy for unmeasured parental characteristics; and (c) Blau's (1999) study of data from the National Longitudinal Survey of Youth, which used family fixed-effect models that relate sibling differences in test scores to sibling differences in the individual children's income histories during middle childhood. Finally, additional studies relating changes in income during childhood to changes in child development further highlight the importance of income in early childhood for children's achievement (Dearing, McCartney, & Taylor, 2001; Votruba-Drzal, 2006).

Taken together, these studies suggest that poverty probably matters for children's achievement and later educational attainment, although not as much as some of the early and less rigorous studies suggested. No study has been able to rule out all sources of bias or threats to internal validity, but taken together, the robust links between early childhood poverty and later achievement and attainment, as well as adolescent income and attainment, suggest that parental economic resources play a modest causal role. Duncan (2006) concluded that the magnitude of the association between income and academic achievement was moderate among poor families, with a \$3,000 annual increment for several years related to between a .05- and a .18-standard-deviation improvement in achievement (an average effect of a .11-standard-deviation improvement).

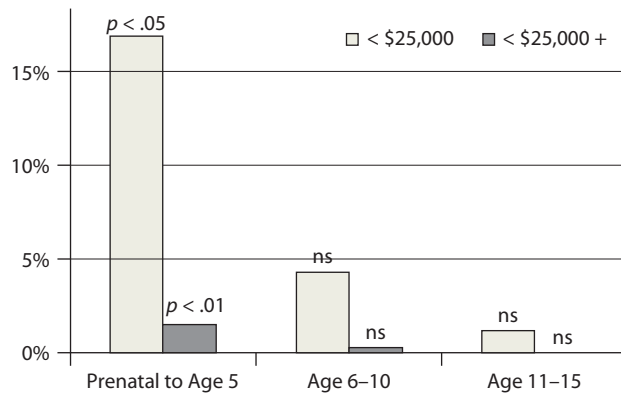
If poverty, especially early poverty, influences children's achievement, it is not surprising to find that it is also associated with educational attainment. Both Campbell, Haveman, Sandefur, and Wolfe (2004) and Duncan et al. (2008) used regression-based approaches and longitudinal data to relate average household income to completed schooling and find that parental income in early childhood and adolescence are associated with increases in educational attainment, although these studies focus on income rather than poverty status *per se*. Campbell et al. (2004) also found that college attendance is correlated only with income during adolescence, perhaps the result of financial barriers to higher education imposed by increasing college

tuitions and credit constraints (Belley & Lochner, 2007; Kane, 2007). Analyzing a sample of adoptees, Plug and Vijverberg (2005) found that parental income is associated with educational attainment both among adoptees and biological children. Moreover, the estimates are quite similar across these groups, leading the authors to conclude that family income plays a causal role in determining educational attainment.

One final natural experimental study used the oil boom in Norway in the beginning of the 1970s as a source of exogenous variation in family income. Instrumenting childhood family income with being born in the region and cohorts affected by the oil boom, Løken, Mogstad, & Wiswall (2012) find that a simple linear estimator of income is misleading because it assigns little weight to the large and positive marginal effects in the lower part of the income distribution. They estimate substantial positive effects of childhood family income (averaged over Ages 2 to 12) for children living in families in the lower part of the income distribution.

With the exception of Duncan et al. (2010; see also Ziol-Guest, Duncan, Kalil, & Boyce, 2012) work, the prior income literature has not been able to relate family income early in a child's life to adult outcomes, largely because data on both early childhood income and later adult outcomes had not been collected in one study. However, recent research has made this link using data from the Panel Study of Income Dynamics, which has followed a nationally representative sample of U.S. families and their children since 1968 (Duncan et al., 2010). The study is based on children born between 1968 and 1975, for whom adult outcomes were collected between Ages 30 and 37. The study measured income in every year of a child's life from the prenatal period through Age 15. They find that directions of all of the correlations between average childhood income and outcomes are as expected statistically significant—positive for “good” outcomes and negative for “bad” ones. However, their effort to separate income from other related disadvantages and characteristics of poor children by entering controls indicated that a substantial portion of the simple correlation between childhood income and most adult outcomes can be accounted for by the disadvantageous conditions associated with birth into a low-income household, rather than low-income itself.

Some argue that the sensitivity of brain development to early experience would imply that poverty during early childhood may be particularly pernicious. To test this, Duncan and colleagues replaced the average childhood income measure with three stage-specific measures of log



**Figure 14.6** Increase in adult earnings associated with a \$3,000 annual increase in income. “ns” indicates not statistically significant at  $p < .05$ .

Source: Authors’ calculations based on data presented in Duncan, Ziol-Guest, and Kalil, 2010.

income (early childhood, prenatal through fifth year, and middle childhood and adolescence) and an extensive list of background controls. For families with average early childhood incomes below \$25,000, a \$3,000 annual boost to family income was associated with a 17% increase in adult earning (Figure 14.6). Results for work hours are broadly similar to those for earnings—a highly significant estimated impact of early childhood but not later childhood income. In this case, a \$3,000 annual increase in the prenatal to Age 5 income of low-income families is associated with 135 additional work hours per year after Age 25. In contrast, increments to early childhood income for higher-income children were not significantly associated with higher adult earnings or work hours. Further work showed that adult attainment measures—earnings, work, the absence of receipt of welfare income, “on-time” completed schooling—were generally quite responsive to income increases in early childhood for low-income families. Thus, with regard to effects of very low family incomes, early childhood appears to be a much more sensitive period for more adult outcomes than does income in middle childhood or adolescence.

Links between wealth and both academic achievement and educational attainment are well established in the literature, but studies have not yet been rigorous enough to provide evidence of causal associations. Importantly, associations between wealth and achievement and attainment seem to hold even when controlling for household income, which is modestly correlated with wealth. Greater wealth is related to higher reading and math skills in children (Loke & Sacco, 2011; Orr, 2003; Phillips et al., 1998; Shanks, 2007; Yeung & Conley, 2008; Zahn, 2006).

Some evidence suggests that these associations may be selective, with stronger and more consistent relations between wealth and math skills than reading (Shanks, 2007; Yeung & Conley, 2008), and larger associations for school-aged children when compared with preschool-aged children (Yeung & Conley, 2008). Wealth is also linked to higher rates of high school graduation (Destin, 2009; Kim & Sherraden, 2011), college enrollment (Conley, 2001; Destin, 2009; Elliott, 2008; Morgan & Kim, 2006), and college degree attainment (Nam & Huang, 2009; Zhan & Sherraden, 2011). Despite extant literature documenting these associations, it is challenging to draw causal conclusions based on this body of research because few studies have employed research designs or analytic methods that deal effectively with the kinds of threats to internal validity discussed previously.

### **Behavior and Mental Health**

In addition to lagging behind their more advantaged peers when it comes to academic achievement and educational attainment, low-income children are typically rated by their parents and teachers as having more behavior problems than more affluent children. In childhood, this is reflected in elevated levels of externalizing problems, such as aggression and acting out, and internalizing problems, such as depression and anxiety. In adolescence and later adulthood, poverty is related to higher rates of nonmarital fertility and criminal activity. For example, compared with children whose families had incomes of at least twice the poverty line during their early childhood, poor males are more than twice as likely to be arrested. For females, poverty is associated with a more than fivefold increase in the likelihood of bearing a child out of wedlock prior to Age 21 (Duncan et al., 2010). Again, the extent to which these associations reflect causal associations remains uncertain.

A large literature has used longitudinal data from nationally representative and diverse samples and regression techniques to more carefully isolate associations between poverty and dimensions of behavior and mental health in childhood. Links have been found between income and several dimensions of psychological functioning including, internalizing and externalizing behaviors, antisocial behavior, inadequate self-regulation, and poor mental health (Blau, 1999; Mistry, Vandewater, Huston, & McLoyd, 2002; Votruba-Drzal, 2006; Yeung, Linver, & Brooks-Gunn, 2002). For example, 7.8% of poor vs. 4.6% of nonpoor parents rated their children as having difficulties with emotions, concentration, behavior, or getting along with others (Simpson, Bloom, Cohen, Blumberg,

Bourdon, 2005). These associations, however, are not consistently replicated in studies that hold constant confounds, such as family structure and parental education (Duncan & Brooks-Gunn, 1997; Duncan et al., 2008; Mayer, 1997). For example, Dearing, McCartney, and Taylor (2006) examined within-child associations between income and young child behavior and found significant negative effects of lower family income on externalizing behavior, especially for children who live in chronically poor households, but not on internalizing behavior.

A small literature suggests that relations between income and dimensions of behavioral functioning may be nonlinear, with affluent and poor youth showing similar patterns of risk (Luthar & Becker, 2002; Luthar & D'Avanzo, 1999; Luthar & Latendresse, 2005). With data from three cohorts of children and adolescents sampled from more affluent communities and comparison groups from inner-city neighborhoods, Luthar and colleagues have shown that in the case of certain dimensions of behavior, particularly substance use and internalizing problems, children from affluent communities look more similar and sometimes even worse than their counterparts from inner-city schools (Luthar & Latendresse, 2005). For example, in her first cohort study, Luthar found 10th graders attending a suburban high school reported significantly higher use of cigarettes, alcohol, marijuana, and hard drugs when compared with students attending an inner-city high school. Moreover, the advantaged teens had significantly higher anxiety and somewhat elevated depression (Luthar & D'Avanzo, 1999). Two key pathways through which affluence seems to give rise to behavioral maladjustment in children are heightened achievement pressures as well as greater physical and emotional isolation from parents, which is common in dual-career families (Luthar & Latendresse, 2005). It is difficult to know whether these results are generalizable to representative samples of children. Moreover, concerns over omitted variable bias are not addressed adequately in these studies.

Researchers have rarely used rigorous experimental or strong quasi-experimental designs to study children's psychological and behavioral health. An exception is work by Costello, Compton, Keeler, and Angold (2003), who were able to take advantage of the Great Smoky Mountain Study of Youth, which gathered longitudinal data on child outcomes during the introduction of a casino by a tribal government in North Carolina. The casino distributed about \$6,000 each year to all adult tribal members. Akee, Copeland, Keeler, Angold, and Costello (2010) compared Native American children with non-Native American

children, before and after the casino opened, and found that receipt of casino payments increased the educational attainment of poor Native American youth by nearly a year and reduced criminal behavior and drug use. A second exception is a study by Morris and Gennetian (2003) that used data from a random assignment pilot welfare reform program in Minnesota that included wage supplements to examine links between income and child development. The study found that increases in family income were related to higher levels of school engagement and more positive social behavior in children.

Across the broad literature addressing links between poverty and children's social, emotional, and behavioral well-being, it is likely that, to the extent that effects are causal, they are selective. Accumulating evidence suggests that, for example, poverty may be more strongly associated with externalizing problem behavior, such as aggression, rather than internalizing behavior, such as depression. The fact that family income may be more linked with some types of behavior than others is not surprising. However, discrepancies across studies may also be attributable to differences in study design. Studies vary considerably in the ages of children and the timing of the poverty or income measure. There is little evidence to indicate whether current or permanent income is a stronger predictor of children's behavior. Nor is there clear evidence on whether the age at which poverty is experienced or timing of poverty is salient in understanding associations between income and children's behavior.

In recent years, a growing literature has examined relations between timing-specific measures of household income (e.g., early childhood income, middle childhood income, adolescent income) and behavioral and psychological functioning into adulthood. These studies show that children raised in low-income households have higher rates of arrest and incarceration in adulthood than their affluent counterparts (Bjerk, 2007; Duncan et al., 2008). Duncan et al. (2008) found that boys living in poverty during the first 5 years of life were more than twice as likely to be arrested as boys who had family incomes over twice the poverty threshold (28% versus 13%). However, taking into account the variety of ways in which poor families differ from wealthier families reduces the associations to statistical insignificance. Thus, it is questionable whether elevations in criminal activity can be attributed to poverty per se, rather than the range of social disadvantages associated with poverty.

Similarly, nonmarital births are more prevalent among women who experienced poverty as children. More than



half of girls who experienced poverty for the first 5 years had a nonmarital birth by Age 28, compared with 21% for those with family incomes between 100% and 200% of the poverty threshold and only 8% for those with household incomes over 200%. Attempting to isolate a causal effect of income, Mayer (1997) reduces these associations by more than half, but still finds a significant association between income during adolescence and nonmarital fertility. Duncan et al. (2010) have examined whether the timing of poverty matters for dimensions of behavioral functioning and find that income during adolescence, not earlier in childhood, is most strongly associated with adult behavior. In these cases, though, income increments in adolescence were more consistently significant for children in middle- and higher-income (income greater than \$25,000) than lower-income families.

Few studies consider links between wealth and dimensions of emotional and behavioral functioning. The tendency in the wealth literature has been to focus on academic achievement and educational attainment. An exception is a study by Shanks (2007) that uncovers modest relations between wealth and a broad measure of children's behavior problems. A second study by Kaushal and Nepomnyaschy (2009) found significant associations between wealth and children's participation in extracurricular activities, but no association between wealth and suspension or expulsion from school. Far too few studies have explored linkages between wealth and emotional and behavioral development to draw clear conclusions from this literature.

In sum, associations between income and dimensions of children's behavioral functioning tend to be less consistent than are links with achievement and attainment and less robust to more rigorous methodological approaches and analytic techniques. To the extent that there are causal connections between income and behavior in childhood, these influences may be selective, with some evidence to suggest there are stronger associations with dimensions of externalizing than internalizing problems. It is important to note, however, that few studies have been able to differentiate these subtypes of problem behavior. The global measures of child behavior problems commonly found in large nationally representative data tend to rely more heavily on items that assess externalizing problems, such as aggression and oppositional behavior, than internalizing problems, including depression and anxiety.

Future research would benefit from more careful attention to unique associations between income/poverty and particular dimensions of children's behavioral functioning

as well as greater attention to internalizing problems. When it comes to socioeconomic variability in important adult behaviors, such as arrests, nonmarital childbearing, and educational attainment, the timing of income seems to be important, with income in adolescence more strongly related to adult behavior than is income in earlier life stages. Importantly, very few studies have assessed these linkages, so additional research is necessary to confirm these findings.

### *Physical Health*

Growing up in poverty is associated with a variety of worse health outcomes. Compared with children in nonpoor households, poor mothers report that their children have worse overall health. Currie and Lin (2007) found that only 70% of poor children were reported to be in excellent or very good health, compared with 87% of nonpoor children (Currie & Lin, 2007). In Western industrialized nations, some evidence suggests that economic disparities in general health tend to grow from early childhood through adolescence (Case et al., 2002; Case, Lee, & Paxson, 2008; Currie & Stabile, 2003; Murasko, 2008). The gap between poor and nonpoor children in excellent or very good health grows from 15.5% for 2- to 3-year-olds to 19.2% for 13- to 17-year-olds (Currie & Lin, 2007). This may be because income protects children's health at the onset of early chronic conditions (Case et al., 2002). The steepening of the income gradient as children age, however, is not consistently replicated in the literature (Chen, Martin, & Mathews, 2006; Currie & Lin, 2007; Khanam, Nghiem, & Connelly, 2009; Propper, Rigg, & Burgess, 2007; Reinhold & Jurges, 2012).

In the United States, children from poor households also have higher rates of chronic conditions such as asthma and diabetes, as well as hearing, vision, and speech problems. About 32% of poor children compared with 27% of nonpoor children are reported to have at least one such condition. Asthma is the most common chronic condition among poor children, followed by mental health conditions, with attention deficit hyperactivity disorder being the largest diagnosis within this category (Currie & Lin, 2007). Finally, poor children suffer from higher rates of health-related activity limitations and acute illness (Currie & Lin, 2007).

Associations between childhood poverty and health extend into adulthood. Economic disadvantage in childhood has been linked to worse overall health status and higher rates of mortality in adulthood (Case, Fertig, & Paxson, 2005; van den Berg, Lindeboom, & Portrait, 2005).

Johnson and Schoeni (2007) find that childhood poverty is linked to heightened risk for several chronic diseases in adulthood. By age 50, individuals who have experienced poverty in childhood are 46% more likely to have asthma, 75% more likely to be diagnosed with hypertension, 83% more likely to have been diagnosed with diabetes, 2.25 times more likely to have experienced a stroke or heart attack, and 40% more likely to have been diagnosed with heart disease, in comparison to individuals whose incomes are 200% of the poverty line or greater. Adult disparities in chronic health problems by poverty status tend to become more pronounced with age.

Unadjusted differences in physical health by childhood poverty status likely overstate the true causal effect of childhood poverty on physical health. Efforts to strengthen causal claims about the links between family income and child health have involved controlling for a richer set of potentially confounding variables (Khanam et al., 2009; Propper et al., 2007; Ziol-Guest, Duncan, & Kalil, 2009). For example, using data from the Longitudinal Study of Australian Children, Khanam et al. (2009) find that the income gradient in child health disappears with the addition of extensive controls. In this study, measures of maternal physical and mental health seem especially important in explaining the income gradient in child health; however, serious questions exist about whether some of these controls, such as maternal depression, may be pathways through which family income affects child health. Other studies have capitalized on more exogenous variability in family income (Duflo, 2000; van den Berg et al., 2005). Van den Berg and colleagues used business cycle conditions as a source of exogenous variation in family income during early childhood and found a robust effect of economic conditions in early life on individual mortality rates at all ages. Being born during a recession was associated with an 8% increase in the mortality rate after the first year of life.

A final group of studies has employed econometric techniques, such as fixed-effects models, to identify less biased estimates of income's links with child health (Burgess, Propper, & Rigg, 2004; Conley & Bennett, 2000; Doyle, Harmon, & Walker, 2007; Johnson & Schoeni, 2007, 2011). Johnson and Schoeni (2007, 2011) uncovered large and statistically significant links between childhood poverty and a variety of health outcomes in adulthood. However, comparing siblings who experienced different economic conditions (i.e., sibling fixed-effect models) greatly reduced these associations. The associations between childhood poverty and adult health status were

robust in sibling models, but associations with a variety of diseases in adulthood (e.g., asthma, hypertension, and stroke or heart attack) were not. This raises questions about the extent to which basic correlations between childhood poverty status and adult health are causal.

Turning to the conditional cash transfer (CCT) programs that pay families for using preventive health care services, the evidence on health impacts is mixed. Although poor households in the programs typically make more use of health and education services, the evidence on improvements in health outcomes is inconclusive (Fiszbein et al., 2009). Some CCT programs improved such health outcomes as stunting and improved nutrition, whereas others have not.

Evidence suggests that it may be important to consider age-specific effects when examining links between family income and adult health outcomes, because income in the earliest year of childhood may play a particularly important role for low-income families. For example, Ziol-Guest et al. (2009) examined associations between mean family income in early, middle, and later childhood and adult body mass index (BMI). They find that prenatal and birth year income is negatively associated with adult BMI among low-income participants of the study, whereas subsequent income is not. More specifically, \$10,000 increases in annual income over these 2 years was linked with a .43 SD reduction in BMI.

Ziol-Guest et al. (2012) investigated whether immune-mediated chronic diseases play a role in associations between poverty very early in life and adult productivity. Drawing data from the PSID, concentrating on families with incomes below \$25,000, they find significant associations with earnings and work hours between Ages 30 and 41 only for income between the prenatal year and Age 2. Turning to health outcomes, they find that increases in family income measured in the prenatal and second year of life are related to reductions in limitations on activities of daily living, hypertension, and arthritis in adulthood. Income between Ages 3 and 5 years and between Ages 6 and 15 years was not similarly protective for adult health. Moreover, they find that associations between early family income and these three health outcomes partially explain links between early childhood poverty and labor force productivity (i.e., work hours and earnings).

Despite recent growth in research addressing links between income and child health, it is difficult to draw causal connections because these outcomes have received much less attention than achievement and behavioral development. Synthesizing across the current research base that

has used more rigorous approaches to identifying associations, the literature suggests that there may be small links between income and some aspects of children's physical health.

Given the conflicting empirical results, the current literature raises more questions than it answers, pointing to the need for more research. Specifically, future work should consider differences in income's effect by developmental stage and the domain of health outcomes. Finally, methodological considerations, such as differences in measurement, may also be important. Indeed, prior studies suggest that income gradients tend to be more pronounced for more subjective measures of child health, such as parent-report measures, and are less evident in more objective measures, such as biomarkers or physician diagnosis (Currie & Lin, 2007; Reinhold & Jurges, 2012).

### Parental Schooling

Parental academic achievement and educational attainment are correlated with child developmental outcomes. Research on the effects of parental education are motivated both by the idea that parental education and skills might be a better measure of family's SES and permanent income than other SES indicators and because it is potentially less prone to measurement error than other SES indicators.

In the United States and other similar countries, rigorous research has largely focused on achievement and education outcomes, because of the seeming importance of intergenerational transfer of skills within domains. Nevertheless, the accumulating evidence seems to suggest that higher levels of parents' education are causally linked to children's better achievement and education, but these associations are selective. Whether it also has beneficial effects on children's health and behavior is still not clear.

### *Academic Achievement and Human Capital Attainment*

Children with more highly educated parents are consistently found to have more advanced cognitive skills and academic achievement than children of parents with lower levels of education (Haveman & Wolfe, 1995). Analyzing data from a recent nationally representative birth cohort, Isaacs and Magnuson (2011) find that children whose mothers have no higher than a high school degree perform about .7 standard deviations lower on math and .6 standard deviations lower on reading assessments compared with children of mothers whose highest level of education is a bachelor's degree or higher. Comparisons among children by similar categories of paternal education yielded

differences that were similar, but slightly smaller. Differences are apparent not only at school entry, but also in attainment in later years of schooling. In 1999, 82% of children whose parents had at least a bachelor's degree enrolled in college immediately after completing high school, this was the case for only 54% of children whose parents had only completed high school (U.S. Department of Education, 2001).

Most studies estimate linear effects, with little attention to how these effects may differ across the educational distribution or by family or individual characteristics, including developmental stage. If parental education is causally related to child development, it is possible that the effects are nonlinear, as higher levels of skills may represent the acquisition of specialized skills and have fewer economic and social returns, although most studies estimate linear effects. Haveman and Wolfe (1995) find that maternal educational attainment is more closely related to children's academic performance than paternal educational attainment. Their review provides evidence of a nonlinear link between parental education and achievement, such that additional years of school are more beneficial for parents' who have completed high school or only a year or two of postsecondary education, and smaller for parents with years of postsecondary education beyond that level. Given that parental education is often considered fixed, there has not been much attention to the timing of improvements in parental education. One exception is Magnuson (2007), which linked additional years of school for disadvantaged mothers to improvements in achievement during middle childhood, and found that associations were strongest for children who were younger (Ages 6–8).

In response to the challenge of identifying causal associations, social scientists have used two differing strategies. First, they have tried to exploit differing levels of relatedness within families either by using samples of twins or adoptees. Twin studies have compared the offspring of identical sisters who achieve differing levels of education. For example, Behrman and Rosenzweig (2002) used samples of 424 twin mothers and 244 fathers born between 1936 and 1955 with at least one child 18 years of age or older. This approach allowed them to rule out genetic confounds between parents' education and their children's achievement. They found that maternal schooling does not have a beneficial effect on children's educational attainment. However, their findings may be context dependent because the mothers in their sample who attained more education were more likely to work out of the home, and this may have had an offsetting

negative effect on children. In contrast, they did find that paternal schooling has a positive effect on their children's schooling. An additional year of paternal schooling raised their child's educational attainment by slightly more than a third of a year (see also Antonovics & Goldberger, 2005).

A similarly designed analysis of both Danish twins and Norwegian twins suggests substantial effects of paternal education and near zero effects of maternal education. However, in one of these studies Bingley, Christensen, and Jensen (2009) use Norwegian data and find that there has been a historical shift, such that for earlier cohorts, fathers' education mattered more than mothers' but that for more recent cohorts, mothers' education appeared to be more influential than fathers'.

Another within family approach to disentangling these influences has been to use samples of adopted and biological children. In this study design, if the adoption process mimics random assignment then there is not an association between the characteristics of the placed infant and the adopting family. However, in many adoption samples, the process is not well described and thus the "random" nature of the assignment is highly questionable. Three studies have been conducted with U.S. samples, and all provide some indication that parental education is linked with children's educational attainment. Using a sample of adopted adolescents and matched biological children in two-parent families, Neiss and Rowe (2000) estimate the proportion of the association between parental education and children's verbal IQ that is attributable to genetics and to education *per se*. They found that parental education was significantly but modestly associated with adolescents' verbal IQ. The correlation between maternal education and child's verbal IQ was .16, and the correlation between paternal education and child's IQ was .18. Analysis of the Wisconsin Longitudinal Study by Plug (2004) and of Korean adoptees by Sacerdote (2007) find that associations between biological children and parents' education are larger than those for adoptees, but the estimates for adoptees are still positive and significant.

A second strategy has been the use of quasi-experiments and instrumental variables. One study of the impacts of mothers' schooling on children's development involves experimental manipulation of mothers' schooling. Genetian et al. (2008) exploit the fact that the National Evaluation of Welfare to Work Strategies Child Outcome Study randomly assigned welfare recipients with young children to either an education- or work-focused program group or to a control group that received no additional assistance. Their work takes advantage of the experimental

design by using an instrumental variable approach to estimate the effect of maternal schooling on 5- to 7-year-old children's academic school readiness. They estimate that an additional 9 months of schooling causes a quarter of a standard deviation increase on a test of young children's academic school readiness and a similar sized reduction in academic problems such as grade retention.

More recently, differences in educational attainment due to changes in school-leaving policies have been examined. Using U.S. data, Oreopoulos, Page, and Stevens (2006) and Page (2006) find that increased parental education due to changes in compulsory school leaving laws and the GI Bill, respectively, are associated with significant reductions in a child experiencing grade retention. Similar patterns for grade retention are found in French data (Maurin & McNally, 2008) and for educational attainment in Britain (Chevalier, 2004). In contrast, using administrative data from Norway and leveraging changes in compulsory schooling policy changes, Black, Devereux, and Salvanes (2005) finds little consistent effect of parental education on completed schooling among the general population, although the estimates are positive and significant for maternal education among those at the lower end of the educational distribution. Using college costs as an instrument for maternal years of school, Carneiro, Meghir, and Parey (2013), find that an additional year of mothers' schooling predicts better reading and math skills during middle childhood.

A final strategy is to use within-family variation. Two studies have taken advantage of the fact that young mothers often acquire more formal schooling between the births of first and subsequent children to estimate whether achievement and behavior differences between earlier- and later-born siblings are related to increases in mother's formal schooling. These studies also provide contradictory evidence. Kaestner and Corman (1995) used this approach in an analysis of scores on the Peabody Individual Achievement Tests (PIATs) and found no consistent effect of increased maternal education on children's achievement scores. In contrast, Rosenzweig and Wolpin (1994) found that an additional year of maternal schooling did have a modestly positive and marginally significant effect on children's PIAT scores. Interestingly, they found that mothers' enrollment during a child's first 3 years had a significant and large positive effect on children's scores on the Peabody Picture Vocabulary Test (PPVT), a measure of receptive vocabulary.

Based on the work by Holmlund, Lindahl, and Plug (2011) and Pronzato (2012), Black and Devereux (2011)



argue that discrepancies across studies are more likely to be caused by differences in methods than by differences in the country of origin or data. Holmlund and colleagues' study applied all three approaches to Swedish data and found, as expected, that OLS methods yielded the largest associations. Using adoption samples, they found that fathers' education appeared to matter more than mothers' education, whereas using instrumental variable methods, mothers' education seemed to have larger associations with their children's schooling outcomes than fathers' education. The authors suggest that these differences might be due to the relative amounts of parent education that providing the identification of the parent education effects. Adoptees tend to come from the higher end of the education distribution whereas the identifying variables used in the instrumental variables studies tend show most variation among families at the lower end of the education distribution.

Pronzato (2012) used a sample of Norwegian twins and confirms this pattern of nonlinear associations in the data. At the low end of the parental education distribution, mothers' education has a stronger association with children's outcomes than fathers' education—the opposite is true at the higher end of the distribution, where fathers' education appears to be more influential.

In summary, understanding the causal associations between parents' education and their children's achievement and schooling is complicated by the seemingly large number of possible omitted variables that might bias such estimates. Efforts to reduce bias through using quasi-experiments and within-family variation have found noteworthy, but modest and selective, associations between parental schooling and children's achievement or attainment. It appears that mothers' education may exert a stronger influence at the lower end of the education distribution and fathers' at the higher end of the distribution. However, many studies supporting such a conclusion have been conducted in other countries, and the extent to which these findings would generalize to the United States is uncertain.

### ***Child Behavior and Health***

Parental education is also linked with children's behavior and mental health, although the associations are not as strong for these outcomes as they are with achievement and education. The difference between children of high school graduates and children of mothers who completed at least a bachelor's degree for teacher reports of externalizing behavior problems in kindergarten amounts to just under a third of a standard deviation (Isaacs & Magnuson, 2011).

A slightly smaller difference was found comparing children in the same categories of fathers' educational attainment. Differences were also apparent in whether children and youth experience psychological disorders, including mood, anxiety, conduct, and substance use disorders by parental education, with the largest differences found between children whose parents have college degrees and those who do not (McLaughlin, Costello, Leblanc, Sampson, & Kessler, 2012). Although these differences suggest the possibility of important gradients in children's behavior by parental education, there are few studies that use rigorous methods to test whether such associations are causal. This is likely because the large administrative datasets that provide evidence for children's school outcomes often do not include good measures of children's behavior.

A study that has used stronger methods than others is Attewell and Lavin's (2007) look at how expanded enrollment in postsecondary education has influenced family processes and children's development. Using nationally representative survey data on mothers' reports of children's behavior problems during middle childhood, they compare children whose mothers have completed college to those who completed high school. The mean difference—over half a standard deviation—is larger than that found by Isaacs and Magnuson (2011). But, when they used matching techniques to reduce confounding differences between the groups, the advantage of having a college educated mother fell to less than .2 of a standard deviation. Finally, Carneiro et al. (2013) use differences in the cost of postsecondary education as exogenous variation in maternal education, and find that an additional year of school is associated with small reductions in mothers' reports of their children's problem behavior problems. This suggests, holding constant many important confounds, that college completion still has a meaningful association with reports of children's behavior, but much of the observed association may be attributed to other factors.

Parental education also has strong associations with children's health—this is especially true in developing countries where more educated mothers are likely to have better birth outcomes, including lower rates of infant mortality (Basu & Stephenson, 2005; Fuchs, Pamuk, & Lutz, 2010). U.S. data show strong maternal education gradients for low birth weight and small-for-gestational-age outcomes, although such gradients are not apparent among Black or Hispanic families (Nepomnyaschy, 2009). Descriptive data indicate that among older children, parental education is also linked with better physical health measured in terms of height and weight (Currie, 2009).

In addition, children with less-educated parents are more likely to be rated as having poor or fair health and also more likely to have health problems that limit their physical or school activities (Chen et al., 2006). Again, however, such gradients differ by race with the most pronounced differences found for Whites and Blacks, and smaller differences among Asians and Hispanics (Chen et al., 2006).

There are only a few rigorous studies that try to identify the unique effects of parental education for children's health. All use instrumental variable methods, but they come to divergent conclusions. Currie and Moretti (2003) exploited variation in education due to college openings and found that higher levels of mothers' education improved birth outcomes. In contrast, focusing on discontinuities in school leaving policies in Texas and California as a source of exogenous variation in maternal high school completion rates, McCrary and Royer (2011) found no effect of increased maternal education on children's health outcomes. Finally, in the United Kingdom, an instrumental variable study of compulsory school leaving policy changes that affected the lower end of the education distribution found little association between parental education and a range of children's health outcomes such as low birth weight and chronic health conditions (Lindeboom, Llena-Nozal, & van der Klaauw, 2009).

In summary, although the correlations between parental education and children's health and behavior are strong, there is much more to learn. Important questions should start with whether such differences are due to education *per se*, rather than the range of other disadvantages that are strongly correlated with low education. In this work, it is also important to consider the functional form of education, for example, is postsecondary education especially important or do improvements at any point in the education distribution make a difference? Finally, health and education are diverse domains, and it is likely that there are differences in associations and causal connections across these outcomes. These will be important topics for future research.

### Parental Occupation

A growing literature has considered relations between parental occupational characteristics and child and adolescent development. Nearly all of the work is correlational and, when compared with the literatures addressing family income and parental education, far fewer studies rely on quasi-experimental designs or rigorous analysis of longitudinal data. Thus, it is challenging to rule out threats to validity posed by omitted variables and simultaneity

bias. Some address these concerns by including extensive sets of baseline characteristics of children and families in their analytic models (e.g., Parcel & Menaghan, 1994), or by modeling reciprocal effects of job characteristics on parental values, cognitive skills, or personality traits (Kohn & Schooler, 1982).

The evidence on causal links between parental occupational characteristics and children's development is quite tenuous. For example, it is difficult to know based on the literature whether more prestigious jobs that tend to be more cognitively demanding lead parents to value self-direction in their children, or rather if parents with higher academic aptitude may just be more likely to both obtain prestigious jobs and to value self-direction in children. When it comes to concerns of reverse causality, in most studies it is impossible to determine whether low-prestige jobs give rise to more behavior problems in children or if parents' labor force participation is compromised by their child's behavioral functioning (Coley, Ribar, & Votruba-Drzal, 2011). Also, much of this literature has fallen short of explicitly identifying family-level processes linking occupational characteristics and children's development. Instead there is a tendency in the literature to focus either on family processes or on child functioning, with the prior never making linkages to child functioning and the latter not delving into family-level pathways.

Three occupational characteristics consistently correlated with child development are nonstandard work hours, job stress, and occupational complexity. Nonstandard work schedules, typically defined as work schedules that occur outside the typical daytime hours (6 a.m. and 6 p.m.), have been related to moderately worse child functioning across several dimensions. When compared with children whose parents work standard schedules, children whose parents work nonstandard schedules exhibit lower reading and math scores, less participation in extracurricular activities, and tend to be less engaged in school (Han, 2006; Han & Fox, 2011; Hsueh & Yoshikawa, 2007). Children whose mothers work nonstandard hours also look worse when it comes to emotional and behavioral functioning, with higher rates of internalizing and externalizing problems, delinquency, school suspension, and lower levels of positive behaviors (Dunifon, Kalil, & Bajracharya, 2005; Han, Miller, & Waldfogel, 2010; Heymann, 2000; Hsueh & Yoshikawa, 2007; Joshi & Bogen, 2007; Strazdins, Clements, Korda, Broom, & D'Souza, 2006). Nonstandard work has been linked to increases in body mass index (BMI) (Miller & Han, 2008), though not consistently when using methods that more rigorously control for

omitted variable bias (Morrissey, Dunifon, & Kalil, 2011). Despite extant literature linking nonstandard work schedules to child well-being, endogeneity and simultaneity bias are major concerns when attempting to draw causal conclusions from this literature.

The existing literature has uncovered associations between job stress, which encompasses feelings of work overload, pressure, as well as negative social interactions in the workplace, and family functioning. (For a review, see Repetti, 2005.) A growing literature, relying on naturalistic methods linking day-to-day variability in workplace stress to family interactions, helps to reduce concerns of endogeneity and allows researchers to establish clearer temporal precedence when it comes to addressing concerns of simultaneity bias (Repetti, 1994; Repetti & Wood, 1997, Story & Repetti, 2006). For example, in the Daycare Reunion Study (Repetti & Wood, 1997), low- and middle-income mothers evidenced greater emotional and behavioral withdrawal during videotaped parent-child reunions on days when they reported heightened workloads and greater interpersonal stress at work, than on days when workloads were lower and interpersonal stress was lessened. Despite a large literature linking multiple dimensions of job stress to aspects of family functioning, few studies link these family processes to child well-being and those that do tend to uncover small or insignificant associations (Repetti, 2005). This may not be surprising, because much of this work focuses on short-term responses in family processes to possibly temporary work stressors, but when these stressors become chronic and associated with repeated activation of the stress response system, there may be more meaningful implications for child and adolescent health and well-being (Repetti, 2005).

Occupational complexity reflects the level self-direction, autonomy, and intellectual flexibility that are required in the workplace (Kohn & Schooler, 1973, 1982) and it is thought to influence children's development through differences in parental socialization and psychological distress. When it comes to parental socialization, it has been argued that occupational complexity shapes child rearing values, beliefs, and behaviors, with parents tending to socialize their children in a way that emphasizes the values and behaviors that are effective in their own workplace (Kohn, 1976; Parcel & Menaghan, 1994). For example, Lareau (2003) has shown that middle-class parents in higher complexity jobs are more likely to stress self-direction, autonomy, flexibility, and reasoning in their child rearing practice. In contrast, parents in low-complexity occupations tend to emphasize conformity to rules, constraint, discipline, and control (Luster et al.,

1989). These differences in values give rise to differences in parenting practices, which may have implications for children's development. Occupational complexity also may influence children's development through parental psychological distress as well. Low-complexity jobs, characterized by little autonomy, high levels of supervision, and routinized tasks, are associated with higher levels of psychological distress and lower levels of self-esteem, which in turn has negative implications for parent child interactions (Menaghan & Parcel, 1991).

Consistent associations have been established between occupational complexity and cognitive, verbal, and academic development, particularly in young children (Enchautegui-de-Jesus, Yoshikawa, & McLoyd, 2006; Menaghan & Parcel, 1995; Parcel & Menaghan, 1994; Yetis-Bayraktar, Budig, & Tomaskovic-Devey, 2013). Yet, there are several notable limitations to the literature, including very little attention to children's behavioral and emotional functioning, and a reliance on methodological approaches that are not effective in seriously addressing concerns of omitted variable bias. Much of this literature has controlled for a set of potentially confounding sociodemographic characteristic of parents and families, but few studies have moved beyond this approach and incorporated more rigorous econometric methods. An exception is a recent study by Yetis-Bayraktar et al. (2013) that used data from the PSID and Heckman two-stage corrections, which model differential selection into employment, and found enduring links between occupational complexity and children's academic achievement.

## POLICY IMPLICATIONS

The accumulated theory and evidence about the importance of SES for shaping family life and children's development suggest some important policy implications. Although no policy changes manipulate family SES directly, a variety of policies and programs target components of SES. As our review of the empirical literature has highlighted, some of the best evidence about the effect of SES components on children comes from quasi-experimental changes in real policies or programs. These studies suggest that on average, increasing the incomes of poor families will improve their children's achievement and attainment, especially if such improvements occur in early childhood. In the past 20 years, the largest cash transfers to low-income families have taken the form of refundable state and federal tax credits, specifically the earned income and the child tax credits; continuing to expand these programs is one policy

option. Another step might be to ensure that sanctions and other regulations embedded within welfare policies do not deny benefits to families with very young children. Not only might young children be the most vulnerable to the consequences of deep poverty, but also mothers with very young children are least able to support themselves through employment in the labor market.

Increased income support can also take the form of such near-cash benefits as food stamps or housing vouchers. Interesting quasi-experimental data on food stamps uses geographic variation in the timing of the rollout of the Food Stamp program in the 1960s and 1970s to link program benefits around the time of birth to adult outcomes (Hoynes, Whitmore Schanzenbach, & Almond, 2012). They find that access to food stamps in childhood leads to a significant reduction in the incidence of metabolic syndrome (obesity, high blood pressure, and diabetes) and, for women, an increase in economic self-sufficiency.

With respect to parental schooling, it is critical to identify policies to improve parents' educational attainment. The historical record shows large improvements in the completed schooling of young adults. In addition, studies of low-income populations routinely report that even without any programmatic intervention, close to 50% of disadvantaged mothers return to school after having children (Furstenberg, Brooks-Gunn, & Morgan, 1987; Rich & Kim, 1999). Yet even with high rates of continued schooling, educational attainment among economically disadvantaged parents remains much lower than among advantaged families and there is little agreement on which policies and programs might promote future increases in schooling (see Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). One promising approach is to reduce the costs of education, particularly higher education, and increase access to adult educational opportunities (Attewell & Lavin, 2007). Indeed, public spending on higher education, including more generous financial aid and the expansion of community colleges, has been consistently linked to increases in college attainment and enrollment (Dynarski, 2002; Seftor & Turner, 2002; Turner & Bound, 2003; but see also Heckman, Krueger, & Friedman, 2005).

Policies related to improving parents' occupational standing are harder to identify. Most employment-related programs emphasize increasing labor market attachment and earnings among the unemployed or underemployed rather than building skills among those who are employed. Generally, the major employment initiatives that have been evaluated extensively have been characterized as providing disappointing results (Heckman et al., 2005), although recent analysis suggests that this conclusion overlooks

some important exceptions (Holzer, 2009). Nevertheless, most evidence suggests that interventions to boost workers' occupations are likely to occur indirectly, by improving their job skills through education and work-based training programs. That said, we note that some policy and programmatic interventions could be created to reduce some aspects of work-related stress. This might include, for example, changing work-based policies around scheduling and work hours as well as other benefits that may reduce work-family conflict for low-skill workers (Bianchi, 2011; Henly, Shaefer, & Waxman, 2006).

In emphasizing the potential importance of policies to boost income in early childhood, we do not mean to imply that focusing on this area is the only policy path worth pursuing. Obviously investments later in life and those that provide direct services to children and families may also be well advised. Economic logic requires a comparison of the costs and benefits of the various programs that seek to promote the development of disadvantaged children throughout the life course. In this context, expenditures on income-transfer and service-delivery programs should be placed side by side and judged by their benefits and society's willingness to pay for the outcomes they produce, relative to their costs.

## CONCLUSION

The study of SES and children's development has provided important insight both into how children's development is affected by social contexts and how social and economic structures affect the life chances of children. The stubborn and pervasive intergenerational transmission of SES advantage is striking, and yet the strength and historical persistence of these associations obviate neither the permanence nor causal nature of the associations. Social science and, increasingly, biological science, are important tools in understanding the extent to which parents' socioeconomic fortunes portend their children's life chances as well as explaining the social and individual developmental processes that link parents' and children's lives.

Continuing progress in the field requires advances in both theory and empirical work. Three mid-level theoretical frameworks, each aligned with a different disciplinary perspective, have guided empirical work to date. Each of these frameworks would benefit from greater specificity of key concepts and underlying mechanism so that the theories can be formalized in a way that lays the ground for more ambitious—and refutable—hypotheses. To date these theories are most commonly used to interpret



expected associations, rather than being pushed to generate concrete, disconfirmable predictions. To move theory forward, scholars must more carefully articulate the processes of influence and critically evaluate them in light of rigorous empirical work.

Second, additional theory building must articulate how processes of influence may differ across contexts and result from individual differences. Though each perspective incorporates these ideas to some extent, none of these theoretical frameworks has clearly specified how context and individual differences, including developmental age, affect these processes. Finally, meta-theoretical work that bridges and integrates these perspectives must be advanced to consider how the identified processes relate to each other so that the field has a more complete understanding of SES's influence on children and families (see for example, Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1).

Empirical research also has a role to play in moving the field forward. First, greater attention should be given to links between SES and several domains of development, specifically children's behavior and health. Theory supports these causal links, yet there are few studies that have good measures of these types of domains. Second, research should pay greater attention both to the functional form of associations and the developmental timing of the experiences, as both may moderate the effects of improvements in these components of SES. Third, there is a need for greater methodological rigor in empirical studies of the causal impacts of components of SES on child outcomes. There are many more correlational studies that were conducted well before stronger methods for causal analysis and the software to implement them became widely available. Sorely needed are a new generation of studies that employ strong methods to revisit some of the key causal connections, as well as journals that prioritize replication and extension studies as much as studies of novel topics. Finally, we expect that continued attention to neurocognitive and physiological pathways will yield important insights, but also caution that these approaches will be most fruitful when combined with methodologies that improve causal inference (Duncan & Magnuson, 2012).

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## CHAPTER 15

# Children in Medical Settings

BARRY ZUCKERMAN and ROBERT D. KEDER

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## INTRODUCTION

This chapter presents information about the changing nature of children's health and approaches to the health care of children in various medical settings. Special emphasis is placed on the impact of medical advances made in the latter half of the 20th and beginning of the 21st centuries. These advances have heavily contributed to a significant change in the epidemiology of children's disease,

primarily a decrease in death and an increase in chronic disease.

Reduction in mortality and infectious diseases provided the opportunity to focus on new morbidity problems such as attention-deficit/hyperactivity disorder (ADHD), learning disabilities, autism, child maltreatment, and common behavior problems. The clinical challenges related to these problems center around prevention, early identification and effective management. Children with chronic disease face unique challenges differentiating them from healthy children in terms of coping with illness and hospitalization, education, pain management, adaptation to disease, impact on family and siblings, and preparation for death. These

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children therefore have special health care needs that require collaboration across disciplines.

Advances made in the understanding of disease processes are the driver of change in how health care is delivered. Developmental science, neurobiology, and now the emerging field of epigenetics, the study of the influences of the environment on gene expression, continue to lead to a better understanding of the health, developmental, and life-course trajectories of children and what strategies and interventions can promote optimal outcomes. Additionally, disparities in health care in addition to socioeconomic conditions have significantly influenced the health outcomes of children today. Better understanding of the barriers to care faced by low-income children and families including the unequal access to efficacious treatment have led to programs and policies to better attempt to improve the outcomes for children and reduce this gap. Such interventions will be noted throughout this chapter.

To begin this chapter, we review historical events and innovations that have shaped the current setting of health care for children followed by the impact changing technology and epidemiology have made on how health care is delivered. Here we have conceptualized three major eras of health care to lay groundwork for the changing forces and dynamics of children's health care. Contributions of emerging frameworks will then be reviewed before describing the medical environment for healthy children. The specialized care and environments for children with chronic diseases will then be discussed followed by implications and changes for the future of the health care of children. Throughout the chapter, examples of diseases and conditions related to the section will be additionally presented.

## **HISTORICAL PERSPECTIVE OF MEDICAL CARE FOR CHILDREN**

Historical events and innovations since the beginning of the 20th century have shaped the current setting of health care for children. This section covers them in three major eras. The third era has not yet started but its scientific base is evolving and will likely lead to significant change.

### **The First Era of Medical Care for Children**

During the first era of medical care for children through the mid-20th century, infectious diseases (especially those causing gastrointestinal or respiratory disease) and unsafe

living conditions caused the majority of medical problems and death in children.

Physician expertise at the time was seen in their clinical descriptions and identification of diseases; however, their treatment options were rudimentary, consisting of bloodletting, laxatives, and mercury, especially for adult diseases (Jones, Podolsky, & Green, 2012). The lack of effective treatments for most diseases limited medical care for children. Doctors had little to offer except hand holding to help children survive acute illnesses. A common treatment was fresh air and sunshine; exemplified by "floating hospitals" in New York and Boston or related fresh-air facilities. Floating hospitals for children were actual boats tied to docks and floating in the harbor during the day so children would be exposed to fresh air. In addition many hospital rooms for both children and adults had porches connected to the rooms to provide access to sunshine and fresh air. Only poor children would be hospitalized because unlike their home, hospitals at least provided a clean bed with adequate and hopefully nutritious food. Children from more affluent families were cared for in their home, an environment that was cleaner and safer than the hospital. This was the era of doctors making house calls.

Most health gains during this era were the result of public health improvements, primarily clean water sources, improved sanitation, and pasteurization. Pasteurization that eliminates many bacteria was originally developed in 1864 to prevent wine and beer from souring (Carlisle, 2004) and milk was not pasteurized in the United States until 1892 (Selitzer, 1976).

### **The Second Era of Medical Care for Children**

The second era of health care began mid-20th century featuring significant biomedical innovation led by the introduction of vaccines to prevent many important infectious diseases and antibiotics to treat other infections. It is marked as the era of the emergence of children with chronic illness and special health care needs in response to this reduction in mortality.

Development of vaccines has saved lives and in some cases eliminated the disease they targeted. For example, smallpox caused by *Variola major* and *Variola minor* had mortality rates ranging from 9% to 62% depending on the virus subtype. In 1967, the World Health Organization (WHO) estimated 15 million people contracted smallpox with 2 million related deaths (Hopkins, 1989). The last case of smallpox in the United States was in 1949 (Centers for Disease Control and Prevention [CDC], 2007), the last

known natural case in Somalia in 1977 and was officially declared eradicated in 1979 (WHO, 2013b).

The history of polio not only illustrates disease eradication but also highlights key aspects of the second era of health care that involves the confluence of scientific advancements, political actions, public awareness campaigns, and public health measures in response to a disease epidemic. Similarly, rehabilitative medicine, medical philanthropy, the early beginnings of the social and civil rights movement for the disabled also have their roots in polio related efforts (Oshinsky, 2005).

The poliomyelitis virus mainly affects children under 5 years of age, has no cure, and has a 5% to 10% mortality rate due to paralysis of the diaphragm (WHO, 2013a). While there were sporadic outbreaks prior to 1916, from that year on the United States experienced a polio epidemic each summer in at least one part of the country. The United States would see its most serious epidemics in the 1940s and 1950s (Trevelyan, Smallman-Raynor, & Cliff, 2005). Polio reached a peak in the United States in 1952, with more than 21,000 paralytic cases (Atkinson & Hamborsky, 2012). Polio resulted in long quarantine periods separating children from their parents (Sass, Gottfried, & Sorem, 1996).

The first of two polio vaccines, the inactivated poliovirus vaccine, was developed by Jonas Salk in 1952 and made available for use in 1955. In 1957, Albert Sabin developed the oral polio vaccine, which became available for use in 1962. The last naturally occurring cases of paralytic polio in the United States, in 1979, developed with an outbreak among the Amish in several Midwestern states (Atkinson & Hamborsky, 2012). The Global Polio Eradication Program has contributed to the reduction of polio throughout the world with only three countries (Afghanistan, Nigeria, and Pakistan) remaining with endemic polio in 2013 (WHO, 2013a).

President Franklin D. Roosevelt, who became paralyzed from the waist down in 1921, helped while in office in 1938 to found the National Foundation for Infantile Paralysis, now known as the March of Dimes. This philanthropic organization was invaluable in providing care for affected children and families and investing in the research that led to the development, field trials, and later free distribution of the polio vaccines themselves (Smithsonian National Museum of American History, n.d.). Similarly, the first of the Shriners Hospitals for Children opened its doors in the 1920s with the primary goal of caring for children who contracted polio. This laid the groundwork for the role

that the nonprofit sector would begin to play in children's health care.

Vaccine development continues, and has led to the control of other communicable diseases such as measles, rubella, tetanus, diphtheria, *Haemophilus influenzae* Type b, invasive pneumococcal disease, and most recently rotavirus, as well as other infectious diseases in the United States and other parts of the world. At the same time effective medications to treat cancer and other conditions, such as asthma, have been developed, as well as new health care technology, including diagnostic tools like the PET scanner, equipment for intensive care units, microscopic surgery, insulin pumps for diabetes, and bone marrow transplants for cancer.

These and other biomedical innovations led to important changes in the epidemiology of children's disease by substantially reducing the mortality of various health conditions and eliminating many fatal infectious diseases while incidentally creating a dramatic increase in the number of children with chronic diseases (Perrin, Bloom, & Gortmaker, 2007). For example, care for premature newborns is more efficacious in preventing death but has allowed for increased numbers of children with neurodevelopment disability, blindness, cerebral palsy, intellectual disability, chronic lung disease, and nutritional-related growth problems (Wise, 2012). In addition, advances in the treatment of children with cystic fibrosis, sickle cell disease, and cancer, for example, prevent children with these conditions from dying during childhood, but these children then require ongoing medical and psychological challenges during their significantly increased life span.

There is a stark difference between children with and without chronic illness, not only regarding their symptoms and management of their condition, but also the impact the condition has on their family, educational system, health care system, and financial consequences. For example, the number of hospitalizations over the past 50 years has been concentrated among children with chronic disease; 20% of children contribute to 80% of health care expenditures for children. Between 1962 and 2000 hospitalization rates for all children declined 45% but the rate for children with chronic illness almost tripled from 25% to 70%. The percentage of hospital bed days for children with two or more admissions grew from 4% to 25%. Twenty percent of U.S. households with children have one or more children with special health care needs (National Survey of Children with Special Health Care Needs [NS-CSHCN], 2013).

### Groundwork for the Future Transition to the Third Era of Medical Care for Children

The future of children's health care will focus on wellness and will be based on the growing evidence of how early adverse childhood experiences become embedded in biology and which have short term consequences, but also appear to influence health years later (Halfon & Hochstein, 2002). As our understanding of the basic etiologies of adult illness (e.g., hypertension, diabetes, obesity, and cardiovascular disease) has deepened, there has been a growing appreciation of the role of early social and biologic processes in influencing the onset and severity of these adult diseases. Interventions to promote childhood wellness therefore also have the potential to be beneficial years later by changing the trajectory of biologic changes and delaying onset of disease and/or attenuating symptoms. This is especially important since interventions starting in adulthood have not been effective. This understanding of health trajectories from childhood to adulthood is called life course health (Halfon & Hochstein, 2002).

A key factor underlying most mechanisms of risk conveyance is stress in early childhood, especially as it relates to poverty (Conroy, Sandel, & Zuckerman, 2010). Poverty exerts direct and indirect transmission through parents, especially mothers, and through related environmental exposures that become biologically embedded and can lead to health problems after a long latency.

### SELECTIVE IMPACTS OF CHANGING EPIDEMIOLOGY OF CHILDHOOD DISEASE

The epidemiology of childhood disease has evolved. There are innumerable factors and dynamics that have shaped this process (see Table 15.1) and provided the stimulus and opportunity to shift the focus of medical efforts from child survival to child well-being. This shift includes attention to *how* the health care systems affect child development, including negative psychological impact of hospitalization and the emergence of attention to common problems known as the "new morbidity." Finally, despite an upward trend of improvement in health of children as a whole, disparity in the health trajectories due to socioeconomic status, race, and/or unequal access to efficacious medical treatments also garnered attention. This section highlights these three changes.

TABLE 15.1 Factors influencing children's health

Biomedical Innovation and Health Care Technology
<ul style="list-style-type: none"> <li>• Vaccines</li> <li>• Pharmaceutical development</li> <li>• Effective contraception</li> <li>• Medical devices</li> <li>• Imaging technology</li> </ul>
Health Care Systems
<ul style="list-style-type: none"> <li>• Coordination of medical care</li> <li>• Electronic health records</li> <li>• Quality improvement initiatives</li> <li>• Interpretation services</li> <li>• Patient navigation</li> <li>• Co-located and or coordinated behavioral health care</li> </ul>
Diversity, Multiculturalism, and a Worldview
<ul style="list-style-type: none"> <li>• Global travel</li> <li>• Immigration</li> <li>• Gender roles</li> <li>• Cultural beliefs and behaviors</li> <li>• Use of complementary and alternative medicine</li> <li>• English proficiency of families</li> </ul>
Economic Disparity
<ul style="list-style-type: none"> <li>• Access to care</li> <li>• Access to transportation</li> <li>• Affordability of healthy foods</li> <li>• Cost of medication or copayments</li> </ul>
Community and Environmental Issues
<ul style="list-style-type: none"> <li>• Access to quality early childhood education</li> <li>• Access to appropriate education services</li> <li>• Access to healthy food (food desserts)</li> <li>• Quality of housing</li> <li>• Lead exposure</li> <li>• Community violence</li> </ul>
Agriculture and Food Industry
<ul style="list-style-type: none"> <li>• Processed food</li> <li>• Sugared beverages</li> <li>• Availability of fast food</li> <li>• Use of antibiotics and additives to livestock feed</li> </ul>
Media and Technology
<ul style="list-style-type: none"> <li>• Mass and social media</li> <li>• Internet and availability of information</li> <li>• Violence in television, videogames, and music</li> <li>• Advertising and body image</li> </ul>

Source: Adapted from "What Are Parents Worried About? Health Problems and Health Concerns for Children," by J. M. Garbutt, E. Leege, R. Sterkel, S. Gentry, M. Wallendorf, and R. C. Strunk, 2012, *Clinical Pediatrics*, 51(9), pp. 840–847; "International Perspectives in Early Emotional Development," by R. J. Haggerty, 1998, *Pediatrics*, 102(5 Suppl. E), pp. 1327–1329; "Health Services: Past, Present, and Future," by J. S. Palfrey and J. B. Richmond, 2005, in A. G. Cosby, R. E. Greenberg, L. H. Southward, & M. Weitzman (Eds.), *About Children* (pp. 204–215), Elk Grove Village, IL: American Academy of Pediatrics.



### The Changing Hospital Environment

Advances in medical care and lessening disease mortality shifted attention from preventing death among hospitalized children to buffering the stress of treating their illness in the hospital. Concurrent to understanding normal child development, clinical efforts focused on efforts to understand and address the needs of hospitalized children. The negative impact of hospitalization on children grew out of studies on the negative impact of institutionalization of children.

Starting in the 1950s, mental health professionals provided perspective and strategies in pediatric settings to better prevent emotional difficulties generated by hospitalizations. Changes in the care of hospitalized children were in part catalyzed by the 1952 film *A Two-Year-Old Goes to the Hospital* by James Robertson, a psychiatric social worker and psychoanalyst. This film depicted the impact of separating young children from their parents during hospitalization and drew public attention at a time when visiting by parents was severely restricted in hospitals. Adults, both parents and clinicians, had not fully appreciated the significant impact of separation from parents in the hospital. For older children and adults alike, the most significant concern in hospitalization is fear of bodily harm in the face of medical procedures, especially painful ones. This fear has been labeled *mutilation anxiety*. It was at this time that an application of attachment theory to medical care led to the understanding that children under 4 years of age consider their parents as part of them, and it the loss of a parent, not loss of a limb, that is most stressful.

John Bowlby along with James Robertson subsequently conceptualized the reactions of children to hospitalization as three stages: protest, withdrawal, and detachment (Nagera, 1978). *Protest* involves children's initial response to being left by parents and includes crying and calling out for their parents, which in the past has been a successful signal sent to parents, not strangers, to ask for comfort. During this stage, young children reject attempts by staff to distract or comfort them. After a day or two of protest, children experience *withdrawal*, which refers to indifference and apathy in their interactions with the staff. Children are described as quietly sitting and staring into space with little motor activity, vocalizations, or affect. This stage lasts days to weeks. The last stage is *detachment* and involves what appears to be a recovery when children actively engage with staff and parents, but their interactions are superficial and nonpersonal. Children in this stage do not discriminate between family and strangers. Any unfamiliar person, nurse, or doctor can pick them up and comfort them. The stress of the child's hospitalization on

the parents, and in turn on the responses of parents, can create a negative feedback system in the parent-child dyad resulting in feeding, sleeping, and other problems months after discharge.

These negative emotional and developmental effects of separation associated with hospitalization have been reduced as hospitals evolved away from pediatric wards with multiple beds toward more private double or single patient rooms allowing parents to visit and even stay overnight with their hospitalized child. Child Life programs emerged providing access to trained professionals who work in medical settings to promote effective coping through play, preparation, education, and self-expression activities for children. They help with preparation visits to the hospital, allowing children to take known and comforting objects, like blankets and teddy bears, which allow children to demystify the hospital setting. They also play an important role in educating clinicians, caregivers, administrators, and the general public about the needs of children under stress.

The problem of separation of children from parents has also secondarily resolved with the movement of medical care from an inpatient to an outpatient setting. Fortunately, Child Life programs have also moved to outpatient clinics, emergency departments, and outpatient surgery to help children and parents cope with stress in these settings.

### New Morbidity

Child accidents/injury and chronic illness overtook infectious disease as the leading causes of childhood mortality, and problems rooted in learning, emotional development, behavior, and in socioeconomic and environmental factors contributed to the majority of childhood morbidity. Understanding of disease etiology moved from that of a single "root" cause such as a specific virus or bacteria, to a consideration of multiple factors (Palfrey & Richmond, 2005). Examples of the changing problems encountered by children and addressed in the health care system can be seen in Table 15.2.

These new problems were labeled the "new morbidity" by Haggerty in the late 1970s (Haggerty, Roghmann, & Pless, 1975) and have resulted in significant changes in training of pediatricians to address learning disabilities, attention-deficit/hyperactivity disorder (ADHD), autism, developmental delays, enuresis, encopresis, sleep problems, aggressive behavior, and so forth. New specialties in Adolescent Medicine, Developmental-Behavioral Pediatrics, and Child Abuse Pediatrics obtained official status and requirements by the American Board of Pediatrics. In addition to providing specialty care, these specialists

**TABLE 15.2 Trends in pediatric morbidity****The First Era of Children's Health Care***The 1950s and Before*

- Infectious diseases
  - Epidemics (e.g., influenza, polio)
  - Diseases of overcrowding (e.g., acute respiratory infections, meningitis, typhus, cholera, scabies)
- High infant mortality rates
- Malnutrition
- Few cures for chronic disease

**The Second Era of Children's Health Care***The 1960s to 1980s*

- Specific learning disabilities (e.g., dyslexia, dyscalcula, and dysgraphia)
- Emotional/behavioral disorders (e.g., minimal brain dysfunction, an early understanding of ADHD)
- Family dysfunction
- Functional distress
- Sleep problems
- Toileting and related problems
  - Enuresis
  - Encopresis

*The 1990s to 2000s*

- Disease prevention
  - Sudden Infant Death Syndrome (SIDS)
  - Second-hand smoke exposure
- Injury prevention
- Asthma
- New epidemics (e.g., HIV/AIDS, substance abuse, homelessness)
- Increased survivorship of chronic conditions
- Technology-dependent children
- Lead poisoning
- Social disarray
- Community violence (e.g., intimate partner violence, child abuse, gang violence, sexual assault)

*The 2000s to the Present*

- Injury prevention
- Sports-related injuries including concussion
- Vaccination refusal
- Food allergies
- Overweight and obesity
  - Access and affordability of food
  - Eating behaviors
  - Exercise and activity
  - Childhood diabetes
  - Obstructive sleep apnea
- Autism and other developmental delays
- ADHD and other behavior problems
- Increasing mental health concerns
  - Adolescent depression
  - Childhood anxiety
- Health and social problems related to immigration
- Socioeconomic influences on health
  - Poverty
  - Homelessness
  - Health disparities
- Media use and influences of technology on health
  - Substance use/abuse
  - Media and body image
  - Sexual behaviors
  - Videogames and aggression
  - Internet safety
- School violence
  - Bullying
  - Cyberbullying

Source: Adapted from *Pediatrics*, 51(9), pp. 840–847; “International Perspectives in Early Emotional Development,” by R. J. Haggerty, 1998, *Pediatrics*, 102(5 Suppl. E), pp. 1327–1329; “Introduction: Addressing the Millennial Morbidity—The Context of Community Pediatrics,” by J. S. Palfrey, T. F. Tonniges, M. Green, and J. Richmond, 2005, *Pediatrics*, 115(4 Suppl.), pp. 1121–1123.

trained medical students and residents to address problems of new morbidity and generate new knowledge through research. This impact on health care includes increased emphasis on prevention and the identification of clinical problems through the use of screening tools and clinical assessment.

The federal government through fellowship training, research, and numerous expert reports supported this new focus. The Maternal and Child Health Bureau funded the development of the Bright Futures initiative that contains health care promotion and disease prevention guidelines with a developmentally based approach in the context of family and community (Maternal and Child Health Bureau, 2009). In 2000 the Institute of Medicine (IOM) influential report, *From Neurons to Neighborhoods: The Science of Early Childhood Development* (Shonkoff & Phillips, 2000) reviewed, compiled and summarized the emergent scientific knowledge and called for a fundamental reexamination of the best way to meet the needs of young children and families. This and selected work, including the Institute of Medicine (IOM) wellness report (National Research Council & IOM, 2004), is paving the way for the future of child health.

### Disparities in Health Care and Health

During this time of clinical innovation and reducing mortality, population data also showed some children benefited more than others; differences in access to health care due to family economic status emerged contributing to disparities in health. In the first era of health care, unequal access to medical care was less important because of lack of efficacious treatments. Unequal *access* to newer clinical innovations due to these societal divisions has been a special cause of increasing health disparities including infant death, asthma, and obesity.

The term *health care disparity* refers to the difference between groups in health coverage and access to quality care; minority children with chronic illness are less likely to have a usual source of care or receive care within the medical home (Mulvihill et al., 2007; Newacheck, Hung, & Wright, 2002; Raphael, Guadagnolo, Beal, & Giardino, 2009). Health disparity (or what some call “health inequities”) refers to a higher burden of illness, injury, disability, or death experienced by one group relative to another; in 2005 the rate of asthma was 12% in Black children, 19.2% in Hispanic children, and 8% in White children. Black children are 5 times more likely to die than White children (Akinbami, Moorman, Garbe, & Sondik, 2009). Other examples of White children with better health and health care includes differential morbidity in

cerebral palsy, human immunodeficiency virus (HIV) infection, spina bifida, diabetes, ADHD, Down syndrome, leukemia, and selected congenital heart defects (Berry, Bloom, Foley, & Palfrey, 2010). Finally, among Hispanic children, those from Spanish-speaking households compared to English-speaking households had poorer health functioning and health care suggesting language over and above race impairs access and use of medical care (Blumberg, Read, Avila, & Bethell, 2010). Much of racial disparity in health and health care is confounded by economic status, which is now considered the key driver of disparities (Docteur & Berenson, 2009, 2014).

The efficacy of medical interventions involves mediating the relation between risk of disease and access to care. Basic medical research that improves efficacious treatments contributes to disparities unless all people benefit from such advances; therefore, scientific advances need to be coupled with access to quality health care for all people regardless of ethnicity, income, gender, and other prejudice. For example, when new vaccines, such as the human papilloma virus (HPV) vaccine, which protects against common strains known to cause genital warts associated with cervical cancer, are unevenly provided to children due to ethnicity, insurance status, education, or cultural beliefs, disparities in that disease and the population it occurs in are likely to occur. In terms of therapeutic services, effective treatments for diseases such as autism, which requires intensive levels of coordinated behavioral and rehabilitative therapies, can be limited by insurance coverage or school district. Even a nonbiomedical advance like the Back to Sleep campaign to prevent sudden infant death syndrome (SIDS) maintains a disparity in the face of overall population improvement because more educated families are more likely to hear about and adopt this practice compared to less educated and culturally marginalized families. In response to ongoing disparities, special public health efforts have been implemented to reach groups marginalized by language or culture with the Back to Sleep message (Colson, et al., 2009).

### **EMERGING INFORMATION TO INFORM THE THIRD ERA OF HEALTH CARE: LIFE COURSE HEALTH DEVELOPMENT**

A growing body of evidence has called attention to the early childhood antecedents of adult disease. Childhood experiences including stress, the material environment, health behaviors, and nurturing and stimulation becomes embedded in biology, especially in the brain, cardiovascular,

neuroendocrine and immune systems, and shapes health over the life span. Mothers and their health become important mediators or buffers to many of these childhood experiences.

### **Prenatal Environment**

Initial observation of the association of low birth weight and low weight at 1 year of age and subsequent coronary heart disease was made in England among men then in their 60s and 70s who were born in the early part of the 20th century (Barker, Winter, Osmond, Margetts, & Simmonds, 1989; Barker et al., 1993). This finding was replicated and expanded in multiple studies indicating low birth weight, not weight at 1 year, being the strongest and most consistent predictor to cardiovascular disease among adults even after confounding variables such as smoking, employment, alcohol consumption, exercise, and social class were controlled. Though the replication from different samples and different countries of the correlation of low birth weight and poor in utero nutrition to cardiovascular disease and Type 2 diabetes has been remarkable, there remain methodological concerns with these studies, including failure to control for the life persistence of socioeconomic circumstances and the potential modifying role of health and nutrition during childhood.

Studies of the impact of low birth weight or in utero under nutrition on specific developing organs support these epidemiologic findings and suggest potential mechanisms linking low birth weight and coronary artery disease. For example, fetal under nutrition and/or lower birth weight leads to fewer beta cells within the pancreas at birth and higher concentrations of insulin and glucose concentrations (Hales & Barker, 1992; Kaijser et al., 2009). Low birth weight is also associated with increased blood pressure as adults (Gennser, Rymark, & Isberg, 1988). Reduced birth weight or even protein restriction in animal models is associated with reduced number of nephrons in the kidneys (Mañalich, Reyes, Herrera, Melendi, & Fundora, 2000). Individuals with few nephrons compensate with a higher glomerular filtration rate potentially leading to glomerular injury and hypertension. Whether low birth weight in combination with genes or other factors explain the development of all or some essential hypertension remains to be seen.

Low birth weight itself is a consequence of gene–environment interaction that is just becoming better understood. For example, cigarette smoking's impact on low birth weight is well known but the magnitude of impact among women who smoke the same amount varies based

on mother's biology. Newborn birth weight is 1 pound less when women smoke one pack per day but who possess polymorphisms for two genes that express enzymes that metabolize cigarette smoke compared to mothers who smoke the same amount but are homogenous for these same genes (Wang et al., 2002). Toxic chemicals in cigarette smoke are metabolized much quicker reducing the duration of exposure to harmful chemicals that contribute to lower birth weight. However, this genetic vulnerability has no independent effect on birth weight and is only expressed when women smoke in pregnancy.

Gene–environment interactions (epigenetics), many of which occur in utero, also alter the development of molecular structures that determine the risk for specific diseases later in life including mental health problems, obesity, lipid and glucose metabolism, and adult-onset cardiovascular disease problems (Guttmacher & Collins, 2002). Early experiences and exposures can turn genes on or off leading to changes in function, through DNA methylation and histone modification primarily, and contributes to the pathogenesis of common complex disease. Tissue specific methylation patterns are established before and after birth. For example, studies in humans have shown that factors such as maternal age, race, smoking, and gestational age can be identified by methylation patterns among genes in cord blood or placental cells (Adkins, Krushkal, Tylavsky, & Thomas, 2011; Adkins, Thomas, Tylavsky, & Krushkal, 2011; Schroeder et al., 2011) and demonstrate association of fetal and infant experiences and risks for diseases later in life. When the epigenetic mechanisms for these associations are better identified, potential opportunities to interrupt this conveyance of risk across the lifespan may be possible.

### **Poverty: Material Environment and Stress**

Poverty is a significant determinant of health and occurs along a gradient of poorer health, the lower the social class (Marmot et al., 1991). Poverty is defined by more than low income; it involves deprivation, including measures of the material environment, which are more commonly used in Europe than the United States. Different measures have been developed and debated for both poverty level, income and material hardship (USDHHS/ASPE, 2004). Children in poverty suffer disproportionately, for example, from poor nutrition/anemia, lead exposure, unsafe housing conditions, poor air quality, poor schools, asthma, violence, and developmental and behavioral problems in brain and cognitive development (Call, Smith, Morris, Chapman, & Platts-Mills, 1992; Dowswell, Townner, Simpson, & Jarvis,

1996; Gergen et al., 1999; Mani, Mullainathan, Shafir, & Zhao, 2013; Raizada & Kishiyama, 2010; Sandel, Phelan, Wright, Hynes, & Lanphear, 2004). For children the material environment and stress, especially chronic stress (Baum, Garofalo, & Yali, 1999), provide an important analytic framework to understand the different and synergistic pathways from poverty to child health and development and subsequently adult health (Evans & Kim, 2007; Felitti et al., 1998; Geronimus, Hicken, Keene, & Bound, 2006). Children respond differently to poverty and its components depending on the intensity and duration of exposures to many factors—the number of exposures, the type of protective factors (including temperament and supportive relationships), timing, and biologic and genetic differences (Boyce & Ellis, 2005).

### **Material Environment**

The individual's physical environment mediates exposure to toxins, infectious disease, and inadequate nutrition. For example, among low-income families, poor housing conditions may increase exposure to toxins (e.g., lead) and allergens (e.g., mites), leading to lower IQ (Needleman & Gatsonis, 1990) or lost-school days due to increased asthma (Call et al., 1992). The surrounding social environment brings varying degrees of lessened stimulation, both in terms of amount contingent to child's verbal efforts resulting in less exposure to words and reduced verbal acquisition and readiness for school (Hart & Risley, 1995; Walberg & Marjorikbanks, 1976).

Community and social structure influence the quality of and access to health care and education that leads to poor health, poor education, and inadequate social capital. Social marginalization is also a breeding ground for community violence, a risk factor for serious injuries, posttraumatic stress disorder (Glaser, 2000) and other sequelae of mental illness. However, the significance of material aspects of childhood poverty is likely to be underestimated if health outcomes are measured only during childhood because poverty during childhood also appears to be an important predictor of adult health even with improved social class as an adult (Conroy, Sandel, & Zuckerman, 2010).

### **Stress**

Stress or early life adversity shapes the function of the biologic systems (including the brain) that increase vulnerability to health problems directly and indirectly (Farah et al., 2006). Directly it affects the hypothalamic-pituitary-adrenal axis leading to release and ultimate dysregulation of cortisol and multiple downstream negative effects (Gunnar & Quevedo, 2007). A less well known but emerging



role of hypothalamic-pituitary-adrenal axis (HPA axis) functions is its impact on the brain through cytokines released from the immune system. In addition to neutralizing an immune threat, cytokines act directly on the brain (Dantzer, O'Connor, Freund, Johnson, & Kelley, 2008) and may contribute to depression, behavior dysfunction, and post-traumatic stress symptoms (Keller, El-Sheikh, Vaughn, & Granger, 2010; Pervanidou et al., 2007).

Early infancy is exquisitely sensitive to interactions with caregiving adults. Infants and children experiencing chronic stress or social deprivation demonstrate specific patterns of neurotransmitter release, leading to structural alterations in the brain development. These alterations affect memory (Brunson, Grigoriadis, Lorang, & Baram, 2002), educational attainment, and ability to cope with subsequent stressors (McEwen, 2007). An important study of Romanian children who spent 2 years in an orphanage had a lower IQ and attenuated brain activity compared with foster children and those never institutionalized (Nelson, Fox, & Zeanah, 2013; Rutter, 2002; Rutter, Kreppner, O'Connor, and the ERA Study Team, 2001). Multiple social and family risk factors combine to increase the risk for poor child outcomes (Evans & Kim, 2007; Parker, Greer, & Zuckerman, 1988; Sameroff, Seifer, Baldwin, & Baldwin, 1993).

The impact of multiple stressors on allostatic load results in a process of reestablishing equilibrium after a stressor. (McEwen, 2007) Each time the body goes through allostasis it pays a small price to reestablish equilibrium leading to cumulative impact on the child. For example, low-SES children recover as well from early single health insults as higher-SES children; however since they suffer more health insults their health is poorer in adolescence and adulthood (Keating & Hertzman, 1999). Stressful events appear to form "a pathway or chain of risk" leading to poor health (Ben-Shlomo & Kuh, 2002; Power & Hertzman, 1997).

Specific physiological alterations caused by stress can be highlighted by examining how a selective factor from the social environment becomes biologically subsumed. Rat pups not groomed frequently by their mothers in infancy elicit epigenetic programming; methylation of the gene encoding for expression of the glucocorticoid receptor, which ultimately participates in feedback inhibition of the stress response (Meaney, 2001; Weaver et al., 2004). Those groomed show less methylation, express more glucocorticoid receptor, and then have greater feedback inhibition of the stress response and subsequent lower hypothalamic-pituitary-adrenal axis responses to stresses in adulthood (Hyman et al., 2009). Notably, methylation of

genes is found to be a stable response and is not altered in adulthood (Weaver et al., 2004).

The same epigenetic control of the stress response is also described in humans: Those abused in early childhood have been shown to have methylation at a key promoter site encoding the gene for the glucocorticoid receptor (McGowan et al., 2009). Fewer glucocorticoid receptors in the hippocampus reduce feedback inhibition as adults, leading to greater hypothalamic-pituitary-adrenal responses to stresses than their nonabused peers, resulting in increased cortisol. However, while being abused as a child enhances risk to become an abuser, not all or most abused children become perpetrators. This is likely due to genetic vulnerability of some children. Homozygosity for genes encoding certain enzymes that metabolize common neurotransmitters reduces the likelihood of abused children developing a conduct disorder that involves victimizing others later in life. On the other hand, children who are abused and polymorphic for this gene are more likely to victimize others (Caspi et al., 2002) compared to abused children who are homozygous for these genes. Whether prevention of these and other complex diseases related to gene-environment interaction is best served by identifying biologically vulnerable individuals or universal strategies are unknown and an important challenge for the future.

Stress-related conditions arising from severe childhood physical and sexual abuse (Bremner et al., 1995) also show actual structural changes in the brain by magnetic resonance imaging; atrophy of the hippocampus. This is consistent with the above mechanism and data that shows prolonged stress induced cortisol release leads to damage to neurons in the hippocampus (Gunnar & Vazquez, 2006; Weaver et al., 2004) which can lead to learning and memory problems (Brunson et al., 2002; Gunnar & Quevedo, 2007). Even exposure to family violence leads to structural changes in the brain that can be seen by fMRI as heightened neural responsiveness in the face of "perceived threat" (McCrory et al., 2011).

Exposure to stress associated with low socioeconomic status (SES) among children also has consequences, outside of the central nervous system, mediated by cardiovascular and immunologic systems consistent with allostatic load (McEwen, 2007). For example, low-SES children have increased inflammatory markers, particularly C-reactive protein, fibrinogen, and white blood cells (Danese et al., 2008; Pollitt et al., 2007; Taylor, Lehman, Kiefe, & Seeman, 2006) that may be part of the causal pathway between low childhood SES and adult cardiovascular disease (Pollitt et al., 2007; Taylor et al., 2006).

## Health Behaviors

There is strong evidence that health-related behaviors have their roots in childhood and are associated with social class and many may, in fact, be difficult to change once adulthood has been reached (Conroy et al., 2010). Attitudes and habits regarding eating and exercise patterns, self-care, and the health care system play an important role in determining the emergence and impact of adult-onset disease. Behaviors beginning in childhood including overeating, physical inactivity, and cigarette smoking lead to health problems among adults, resulting in approximately 50% of all adult mortality in the United States (McGinnis & Foege, 1993). Diet and physical activity in childhood contribute to childhood obesity, which is strongly associated with obesity in adulthood (Deckelbaum & Williams, 2001). Eating behaviors early in life are strongly influenced by parental behavior; the choice a parent makes regarding a child's diet starting with whether or not to breastfeed, strongly shapes a child's experience with food and tendency toward obesity. While not definitive, data continue to accumulate that children who are breastfed are less likely to be obese (CDC, 2007).

Children who experience adverse experiences in the early social environment also display other high-risk health behaviors, such as cigarette smoking, alcohol abuse, and multiple sexual partners (Anda et al., 1999; Anda et al., 2002) leading to alcoholism, sexually transmitted disease, unintended pregnancy, and suicide (Dietz et al., 1999; Dube, Anda, Felitti, Edwards, & Croft, 2001; Hillis, Anda, Felitti, Nordenberg, & Marchbanks, 2000). This relationship was found to be graded: Those who had experienced more adverse experiences or household dysfunction displayed more high-risk behaviors as adults.

## Maternal Health

The impact of women's health on the health of their children is not limited to birth outcomes; maternal health conditions and behaviors, especially maternal mental health, cigarette smoking and drug abuse, violence, and traumatic stress, continue to mediate the link between social environment and child outcomes well after delivery. The vulnerability of child behavioral and developmental outcomes to maternal depression is well recognized. Maternal depression shows a strong social gradient, correlating with educational attainment, housing, marital relationship, work role, and stressful life events (Weissman & Olfson, 1995; Zuckerman & Beardslee, 1987). Depressive

symptoms in a mother appear to lead to diminished maternal-infant attachment, less spontaneous interaction with the child (Zuckerman & Beardslee, 1987), and increases in children's cortisol responses to adverse family environment (Ashman, Dawson, Panagiotides, Yamada, & Wilkins, 2002), cognitive outcomes (Cooper & Murray, 1998), and reading skills (Richman, Stevenson, & Graham, 1982). These children also exhibit significantly reduced activity in a region of the brain specialized for expression of positive emotions (Dawson, Frey, Panagiotides, Osterling, & Hessel, 1997). Effective treatment of a mother's depression has been shown to have a beneficial effect on their children (Weissman & Olfson, 2005) suggesting a causal link and opportunity "twofer" by treating the mother.

Child abuse and neglect is a focus of considerable public attention, but only recently recognized is the significant impact of children witnessing violence, especially when the victim is their mother as it is in most cases of intimate partner violence (IPV) (Zuckerman, Augustyn, Groves, & Parker, 1995; Bair-Merritt, Zuckerman, Augustyn, & Cronholm, 2013). Over 15 million children who live in the United States live in families with IPV. Approximately 7 million of these children witness the assault. Childhood exposure to IPV is another example of biologic embedding of stress (McDonald, Jouriles, Ramisetty-Miller, Caetano, & Green, 2006). A child responds with a "flight or fight" reaction to witnessing violence. Although adaptive in the short term, repeated activation of the autonomic nervous system and HPA axis results in pathologic changes in multiple biologic systems. Such activation of the HPA axis stimulates cortisol release leading to an excess of T helper 2 cells leading to airway inflammation and hyperactivity, which along with down regulating cortisol receptors, increases the risk of incidence and severity of asthma (Miller & Chen, 2006). In addition, increased cortisol induced hippocampal neuron loss and damage leading to learning and memory problems (Bremner et al., 1995). Social-emotional health is similarly adversely affected by childhood IPV exposure; 63% of child witnesses to IPV showed worse emotional health compared to the average child (Keeshin, Cronholm, & Strawn, 2012). The co-occurrence of a mother's depression and exposure to violence has an adverse impact on children's learning and behavior in school that is not additive but rather synergistic (Silverstein, Augustyn, Young, & Zuckerman, 2009). The co-occurrence of these two problems may explain lack of effectiveness of some maternal depression intervention studies if exposure to violence is not identified and addressed.

## HEALTHY CHILDREN: NEWBORN NURSERY AND PRIMARY CARE

Medical care is provided to healthy children in the Newborn Nursery and Primary Care offices. In these settings, care is focused on prevention and early identification of problems.

### Newborn Nursery

The vast majority of newborns have uncomplicated deliveries and routine medical care in the nursery focused on respiration and maintaining body temperature immediately after delivery. The use of the Brazelton Neonatal Behavioral Assessment to train doctors and nurses has resulted in more individualized care of healthy newborns and guidance to parents (Brazelton, 1973). Routine screening for potential problems includes conducting a physical and behavioral exam, assessment of intrauterine growth and gestational age, universal newborn blood screening (to identify metabolic problems), and universal hearing screening. Common but important routine medical care involves erythromycin ophthalmic ointment to baby's eyes to prevent gonococcal disease, injection of vitamin K to prevent bleeding, and special care of the umbilical cord to prevent infection. Approximately 10% of infants require some assistance at birth such as mild tactile stimulation to initiate breathing. Approximately 1% require extensive assistance to ensure that they are breathing and obtaining adequate oxygen, sometimes needing suctioning of mucous from the mouth and trachea or possibly endotracheal intubation (passage of a breathing tube down the windpipe to aerate the lungs).

Once newborns are stable after birth, placing them with their mother through skin to skin care is the health care team's next priority (Kennell & Greenough, 2003). Having babies share their mothers' rooms facilitates the mother beginning to read the cues and the signals her baby uses to communicate, allowing her to get to know her child through breastfeeding, consoling, and bringing the infant to alertness. Promoting breastfeeding prior to and following delivery is important since breastfeeding promotes children's health, especially preventing gastroenteritis, ear infections (Ip et al., 2007) and improving receptive language at Age 3 and higher verbal and nonverbal IQ at Age 7; the longer and more exclusive breastfeeding, the higher the scores (Belfort et al., 2013). Given the importance of breastfeeding to child health, WHO and UNICEF launched the Baby Friendly Hospital Initiative, which is a designation a hospital can receive by demonstrating compliance

with 10 steps associated with successful breastfeeding. As of 2010 there were approximately 20,000 Baby Friendly sites world wide with 84 in the United States.

### *In Utero Drug-Exposed Infants: An Example of Problems Encountered in the Nursery*

Drug-exposed babies and drug-using parents are a special problem in newborn care; in 2005 more than 10% of American births included prenatal exposure to alcohol or illicit drugs (SAMHSA Office of Applied Studies, 2003). Categorization of drugs by legal status is not related to their impact on newborns. The effects of marijuana on pregnancy remain debated. Cigarettes and tobacco have a significant impact on fetal growth, later learning, and behavior. In addition to the well-known adverse effects of excessive alcohol use during pregnancy, alcohol also has an important impact on parenting. Illicit drugs, including narcotics (heroin, methadone, codeine, etc.), barbiturates, tranquilizers, and stimulants (cocaine, methamphetamine), are associated with poor prenatal growth and withdrawal when drugs concentrations are high enough. Prescribed drugs like antidepressants for mental health problems also have adverse effects on newborns. Many mothers may use more than one substance during pregnancy, exposing newborns to cumulative and/or potential interactive effects of these substances.

Infants exposed to these drugs in utero, specifically opiates such as heroin or methadone, develop a tolerance to the drug. Following birth, as the concentration of the drug begins to wane these infants develop signs of withdrawal, called neonatal abstinence syndrome (NAS), which include excessive crying, jitteriness, diarrhea, and poor state regulation.

The Finnegan scoring system is used to monitor and guide treatment for NAS (Finnegan, 1986). Scoring takes place at 2-hour intervals evaluating 21 different symptoms grouped into three categories: neurologic, respiratory, and gastrointestinal (Minear & Zuckerman, 2013). Three consecutive scores greater than or equal to 8, or two consecutive scores greater than or equal to 12, indicate severe withdrawal requiring need to initiate pharmacological treatment with either morphine, deodorized tincture of opium, Phenobarbital, and/or more recently clonidine. To date, there are insufficient randomized trials evaluating the benefits of one pharmacological approach over another, and no treatment has been found to be optimal for all of these substance exposures (Minear & Zuckerman, 2013). Hospitalization for NAS ranges from 1 to 4 weeks, weaning newborns from narcotic exposure before they can be

sent home. Parenting is a special challenge; more than 50% of women with substance abuse histories have comorbid psychiatric illnesses (depression, anxiety, bipolar disorder) and most women with addiction have a past history of physical or sexual abuse (National Institute of Drug Abuse, 1994).

### Primary Care and Prevention

Health care for children consists of primary preventive care to promote health, prevent disease, and reduce unhealthy behaviors; intermittent care to diagnose and treat acute problems; and ongoing care to manage chronic illness, many times in collaboration with a specialist. (See Table 15.3.)

Most children are healthy and are expected to receive well child care, or preventive health care, as part of primary care. As of 2011, the CDC reports that 82.2% of school-aged children (5–11 years of age) are in excellent or very good health (CDC, 2011a).

The establishment of an effective clinician-parent/child relationship is the cornerstone to providing effective medical care and is formed when the physician provides continuity of care; the same physician sees the patient at all well-child visits and when available at sick visits. Alternatively, when different physicians see families at different visits, problems can easily fall between the gaps due to either the expectation that someone else will or is taking care of the problem, or limitations in communication (Alpert, Zuckerman, & Zuckerman, 2004).

### Preventive Care

The cornerstone of preventive care in pediatrics is the ever growing number of immunizations that prevent significant infectious diseases. Prevention also involves providing education and advice listed in Bright Futures to promote health and prevent disease. These topics include but are not limited to breastfeeding, sleep positions for infants, discipline, injury prevention, nutrition and sexual health, and alcohol and tobacco use for adolescents. Although

important, studies have not been conducted to determine the effectiveness of most advice in the office setting on actually improving health let alone changing health behaviors.

Other evidence based prevention practices includes promoting literacy through giving books to low-income children and advice to parents to read aloud (Zuckerman, 2009) and selected injury prevention topics. Reach Out and Read (ROR) is a pediatric, evidence-based strategy to prevent problems of early childhood development and learning. ROR also has become a model for a different way of thinking about parent education during primary care encounters, based less on telling and more on creating real-time learning experiences, including modeling developmentally appropriate “reading” strategies (e.g., pointing, naming, and asking questions), and then giving parents a book to take home to implement the recommendation (Zuckerman, 2009). Studies evaluating ROR reported that parents who participated in ROR, compared with parents who did not, were more likely to report (a) reading aloud as a favorite activity, (b) increased centered literacy orientation, (c) frequent reading aloud, and, most importantly, (d) increased language development (Golova, Alario, Vivier, Rodriguez, & High, 1999; High, LaGasse, Becker, Ahlgren, & Gardner, 2000; Needlman, Toker, Dreyer, & Mendelsohn, 2005). In one study, with controlling for confounding variables, children in the ROR group scored 8.6 points higher in receptive language and 4.3 points higher in expressive language, compared with non-ROR groups (Mendelsohn et al., 2001). The homes of children who participated in ROR demonstrated higher scores for directly observed child home literacy and Home Observation for Measurement of the Environment assessments (Weitzman, Roy, Walls, & Tomlin, 2004).

Children with chronic illness present special challenges to the primary health care system as they require tracking and coordinating data from multiple specialists. Surveys show that the medical home model of primary care reaches only about 50% of children with special health care needs leaving many children with chronic diseases, such as asthma, cystic fibrosis, or sickle cell disease, receiving

**TABLE 15.3** Categories of care for well children and children with chronic illness

Preventive	Intermittent Acute	Ongoing Chronic*
<ul style="list-style-type: none"> <li>Immunizations</li> <li>Developmental and psychological screening</li> <li>Disease screening</li> <li>Anticipatory guidance</li> <li>Literacy promotion (Reach Out and Read)</li> </ul>	<ul style="list-style-type: none"> <li>Acute office visits</li> <li>Emergency department visits</li> <li>Hospitalizations</li> <li>Specialty evaluation for new problem</li> </ul>	<ul style="list-style-type: none"> <li>Multispecialty physician services</li> <li>Specialty nursing services</li> <li>Speech, physical, and occupational therapy services</li> <li>Home care and services</li> <li>Mental, developmental, and behavioral services</li> </ul>

\*Low-income children require enhanced primary care and ongoing chronic care to address basic needs and community-based resources.



deficiencies in the quality and coordination of their care (Berry et al., 2010).

### **Screening**

Another key element of preventive care is screening for early identification of physical, developmental, and social issues that affect children's health and well-being. Universal screening is a strategy used to detect a disease in children without signs or symptoms of the disease in question. Selected screening is used for children who have risk factors for a disease and is based on clinical utility. The first consideration is a high cost of not detecting the disease if the disease is untreated; suffering by the child and financial cost on the public health scale. A second equally important consideration is that early treatment is more effective than later treatment. Finally, screening necessitates that diagnostic criteria are identified, treatment is available, and an appropriate screening instrument is available. Screening tests should be easy to perform and interpret, be a direct measure related to the disease in question, and have low risk, low cost, high sensitivity, and high specificity (Fletcher & Fletcher, 2005; Minkovitz & Wissow, 2006).

Laboratory screening tools including metabolic screening of all newborns is now mandated by state laws to detect possible conditions that are treatable, but not clinically evident in the newborn period. Specific disorders screened for vary from state to state but commonly include phenylketonuria (PKU, a metabolic condition that can cause irreversible mental retardation unless detected early), congenital hypothyroidism (CH), congenital adrenal hyperplasia (CAH), sickle cell disease, and cystic fibrosis (CF) and many disorders that are rare. The gravity of late detection and efficacy of early intervention has led to near universal newborn hearing screening to identify and treat infants with hearing loss (Helfand et al., 2001). In primary care, medical screening includes vision screening in children from birth to Age 5, anemia (CDC, 1998), lead (Risshitelli, Nygren, Bougatsos, Freeman, & Helfand, 2006), tuberculosis (Ozuah, Ozuah, Stein, Burton, & Mulvihill, 2001), and sexually transmitted infections. Recent recommendations to conduct universal lipid screening to identify children at risk for future cardiovascular problems, EKG screening to prevent sudden cardiac death among athletes, and newborn pulse oximetry screening to detect critical congenital heart disease in infants raises important questions when the targeted disease is rare, has a prolonged latency, or lack of data to document the effectiveness of screening to reduce morbidity and mortality. Positive

screening can also cause harm including anxiety and invasive evaluations or treatment of pseudodisease (Kaltman, Burns, & Pearson, 2013).

Pediatrics has expanded its reach beyond traditional medicine, which typically focuses on the individual patient to identify psychosocial risk factors for improving health (American Academy of Pediatrics, 2001). Studies of screening efficacy primarily focus on a single psychosocial problem including maternal depression (Olson, Dietrich, Prazar, & Hurley, 2006), parental smoking (Winickoff, Buckley, Palfrey, Perrin, & Rigotti, 2003) or intimate partner violence (IPV) (Siegel, Hill, Henderson, Ernst, & Boat, 1999). One study screened multiple problems including alcohol and drug use, homelessness risk, food insecurity, employment status, and child care needs in addition to the above three risks (Garg et al., 2007).

Developmental surveillance and developmental screening attempt to identify the 17% of children (birth to 18 years) with a developmental delay (CDC, 2011a) to institute diagnostic evaluation and timely intervention. Formal developmental screening is recommended for all children at the 9-, 18-, and 24- and/or 30-month well-child visits and developmental surveillance at every office visit through the age of 5 years (Council on Children With Disabilities, 2006).

Developmental surveillance is a general process involving five key activities that should be performed at every well-child visit: (1) eliciting and addressing the concerns of parents; (2) monitoring developmental milestones; (3) observing the child and family in clinic; (4) maintaining record of the child and families' medical history; and (5) monitoring and identifying both protective and psychosocial risk factors (Council on Children With Disabilities, 2006; Glascoe, 2006; Glascoe & Dworkin, 1995). Developmental screening on the other hand refers to the use of specific, brief, and validated measures that can sort children with a high likelihood of having developmental problems from those who probably do not (Glascoe, 2006).

Three developmental screening tools are commonly used in primary care: (1) the Parents' Evaluation of Developmental Status (PEDS); (2) the Ages and Stages Questionnaire (ASQ); and (3) the Modified Checklist for Autism in Toddlers (M-CHAT). The PEDS is a brief 10-item open response instrument asking parents about developmental concerns for children age birth to 9 years. It has a sensitivity of 74%–79% and specificity of 70%–80% across age levels (Schonwald, Huntington, Chan, Risko, & Bridgemohan, 2009), it is also available in multiple languages. The ASQ is a system of 19 different age-specific

questions inquiring about child specific skills for children 4 months to 5 years. Although it has a sensitivity of 72% and specificity of 86% (Schonwald et al., 2009) and is written at a fifth-grade level, it can take as long as 20 minutes to complete. Although these two screens rank among the best available, discordance between the results of the PEDS and ASQ developmental screens has been noted (Sices, Stancin, Kirchner, Bauchner, 2009). These findings suggest that reliance on a single generalized, validated screening tool may not be sufficient to detect delay.

In general, autism is difficult to detect in very young children. Although average age at which parents first report concerns associated with possible autism spectrum disorder (ASD) is generally reported to be around 17–18 months (Kleinman, Robins, & Fein, 2008) the average age of diagnosis is around 4 years (CDC, 2012). Children of low socioeconomic status are at additional risk of delay in detection of autism (Gray, Tonge, & Brereton, 2006). Autism specific screening is recommended at both the 18- and 24-month pediatric visits (Johnson & Myers, 2007).

The M-CHAT is a 23-item, parent-report autism screening questionnaire that takes about five minutes to complete and also includes a follow-up parent interview. The M-CHAT has a high false positive rate, which is significantly reduced by using the follow-up interview (Chlebowski, Robins, Barton, & Fein, 2013). M-CHAT has low specificity in children born before 28 weeks' gestation who have associated motor, cognitive, visual, and hearing impairments; therefore results should be interpreted with caution for these children (Kuban et al., 2009; Moore, Johnson, Hennessey, & Marlow, 2012).

Children who fail a developmental screening test (either general or specific) should be promptly referred for additional assessment and evaluation. The assessment process should enhance parents understanding of their child, the fit between parents while providing care, and child's behavior and modeling of constructive ways to interact with the child (Parker & Zuckerman, 1990). Additional medical evaluation to determine the primary etiology of the disability may be warranted. For all children with developmental delays, evaluation for iron deficiency anemia and lead poisoning, in addition to hearing and vision screening, should be performed if not yet routinely done (Council on Children With Disabilities, 2006). Genetic, metabolic testing, and/or neuroimaging should also be considered in children with significant problems or those with selective history and physical findings. While most American pediatricians (82%) routinely look to identify general developmental delays (dosReis, Weiner, Johnson, & Newschaffer, 2006),

a national survey of pediatricians and family physicians found 53% reported not using a validated instrument to screen children for developmental delays (dosReis et al., 2006; Sices, Feudtner, McLaughlin, Drotar, & Williams, 2003). Only 8% report screening for autism (dosReis et al., 2006). Efforts to improve these rates are ongoing.

## ADDITIONAL HEALTH CARE ENVIRONMENTS

The majority of healthy children receive health care only through primary care; however acute problems may require the Neonatal Intensive Care Unit following birth and emergency care for significant acute illness or injury.

### The Neonatal Intensive Care Unit (NICU)

The NICU is an evolving health care environment filled with an array of medical devices and lifesaving equipment for children who prior to their development often did not survive the first few hours of life. In this section the unique history of the development of the NICU is discussed followed by the population of infants served and the challenges they face.

#### *History of the NICU*

The care of the premature or sick newborn is linked to the first infant incubator put into use in 1880 at the Paris Maternity Hospital (Baker, 2000). Modeled after incubators for chickens, it was then exhibited in 1896 at the World Exposition in Berlin, which had six incubators and six infants and was called the Kinderburtanstalt, the "child hatchery." The incubators and wet nurses who supplied milk for the neonates constituted the first special care setting for sick newborns. The first early incarnation of a neonatal care in the United States was at the Weiss Hospital in Chicago in 1914.

Sick term and premature newborns and other young infants were previously cared for on the pediatric floors in open wards, whereas well premature infants were given care in premature infant nurseries. The division of sick and well premature infants was related to fear of the spread of infectious disease, especially *Staphylococcus aureus*. This fear persisted despite studies demonstrating that hand washing between handling babies prevented the spread of infections. It was not until 1960 that the first NICU opened at Yale New Haven Hospital and cared for full term and premature born babies with problems, including babies that were infected. Technology was adapted from adult medical care including ventilators to help infants breathe

and EKG machines to monitor the heart. A large open ward layout was used to optimize monitoring of infant vital signs (Gluck, 1992).

From the 1970s onward, clinical and animal research provided important understanding of the underlying physiologic changes associated with birth: asphyxia, respiratory distress, necrotizing enterocolitis, infection, and other disorders. Clinical innovations, such as positive pressure ventilators for respiratory problems, phototherapy for high levels of bilirubin (seen as jaundice), intravenous fluid, electrolytes, and nutrition for nonfeeding infants, were developed and improved over time.

From 1975 to mid-2000 infant mortality decreased from 16 to 7 per 1000 births but the disparity between European American and African American infants remained the same (Wise, 2003). The decline in infant mortality since 1970 is primarily attributable to neonatal intensive care, not the prevention of low birth weight. The *limit of viability*, the gestational age at which an infant has a 50% chance of survival, has been significantly reduced and is currently thought to be around 24 weeks of gestation. The majority of deaths of infants younger than 1 year occur during the first 28 days of life; most of these during the first 7 days. Most survivors younger than 32 weeks gestation, especially extremely-low-gestational-age infants and extremely-low-birth-weight infants, experience an increased risk of serious medical and developmental problems.

### ***Infants Requiring NICU Care and Related Challenges***

Approximately 1.5% of all newborns born in the United States each year have very low birth weight (less than 1,500 grams), and chronic lung disease or bronchopulmonary dysplasia (BPD) develops in about 20% (Baraldi & Filippone, 2007). The development of artificially produced pulmonary surfactant, a biochemical lubricant that facilitates the opening and closing of the lungs, almost single handedly reduced the limit of viability to before 28–32 weeks of gestation.

The brain is the organ system that has proved to be the most vulnerable to premature birth, which leads to later neurodevelopmental problems (Arpino et al., 2010; Vaucher et al., 2012). The risk of neurodevelopmental impairment increases as gestational age decreases. Infectious, gastrointestinal, and respiratory conditions lead to diminished delivery of oxygen and nutrients to the brain and cause hypoxic-ischemic events (HIE); occurring in approximately 2.5 per thousand births (Bonifacio et al., 2011). HIE lead to a sequence of biochemical events

triggering inflammation and nerve cell death resulting in neurologic impairment, seizures, and death. Although early use of surfactant and continuous positive airway pressure (CPAP) decreased mortality and rates/severity of BPD, they have not been shown to reduce further reductions in mortality or neurodevelopmental disability (Vaucher et al., 2012).

A longitudinal study of surviving school age children who had been born at 25 or fewer weeks gestation in 1995 followed until early school age found cognitive impairment in 21% of the children born extremely preterm (compared to 1% in standardized data). When compared to the scores of their classmates, this value rose to 41%. Cerebral palsy was present in 12% of the children (Marlow, Wolke, Bracewell, & Samara, 2005). Even appearing well functioning, children within the normal range of cognitive functioning experience learning difficulties and are less likely to complete higher education than their term peers (Griffiths et al., 2013; Moster, Lie, & Markstead, 2008). Newer more sensitive technology documents previous unknown selective deficits among extremely preterm (EPT) infants. For example, blood oxygen level dependent activation during functional magnetic resonance imaging show reduced working memory and selective attention among 11-year-old EPT children compared with term-born controls (Griffiths et al., 2013). Very preterm children are also at increased risk of problems in social and academic functioning (Schothorst & van Engeland, 1996). Long-term follow-up studies show former preterm infants who did not have medical disabilities as adults have lower educational attainment, lower income, are more likely to receive Social Security benefits, and were less likely to establish a family (Moster et al., 2008).

An important new innovation for term infants with perinatal asphyxiation (deprivation of oxygen at birth) is use of hypothermia (cooling of the brain by 2–4°C) to prevent the progression of neuron cell death and inflammation. Randomized control studies show that cooling of the head as well as the whole body can reduce death and disability as well as decrease lesions seen on MRI in infants with moderate to severe HIE (Edwards, Brocklehurst, & Gunn, 2010).

During the same era of clinical advances, regional perinatal care centers came into being as a mechanism to combine expensive high-tech resources and medical expertise in one place to meet the needs of sick newborns for an entire geographic region. To further concentrate expertise, obstetric care was linked to these specialized centers to combine the care of high-risk mothers and high-risk infants. By the late 1970s, guidelines for the new perinatal centers and the care of individual premature infants were developed and

implemented. The combined impact of clinical innovation and development of these centers had a significant impact on reducing newborn mortality.

Advances in the developmental care of premature newborns in the NICU have paralleled advances in medical care. The developmental aspects of premature babies were initially studied and filmed by Arnold Gesell in the premature incubators in the New York World's Fair in the 1930s. These and other studies led to the contemporary work of Barnard, who first looked at the early extra uterine environment of the premature infant, and Als, who further identified environmental stressors to premature infants and developed interventions to protect them from significant and important negative external stimuli (Als et al., 2011).

The Newborn Individualized Developmental Care and Assessment Program (NIDCAP; <http://www.nidcap.org/>), developed in 2001, encourages individualized care of premature infants to support their physiologic stability and behavior. Direct observation of the infants is an important component of this program. Using a self-named detailed observational tool, the NIDCAP observation, an infant's behaviors can be interpreted as steady and relaxed or as representing stress or discomfort. Once observed, behaviors are interpreted and developmental care plans are developed to support the infant and foster self regulation. These plans involve the structuring individualized care of the infant and family with appropriate physical environments and timing/organization of medical and nursing interventions. Multiple professionals work together to coordinate a developmental framework to support and nurture the parents-infant bond while bolstering parent confidence in caring for their infant's development. NIDCAP is an example of interprofessional collaboration, including providers such as respiratory therapists, occupational and physical therapists, social workers, nutritionists, early intervention professionals, public health nurses, and others (Als, 2013).

### Acute Illness and Urgent/Emergency Care

All children experience episodes of illness that may require a visit to their physician's office, the emergency room, or occasional hospitalization. One of the important developmental tasks for parents is to help their child cope with an acute transient illness. A special role for clinicians is to aid and teach parents to help their child cope. This is particularly true for parents facing a first illness in their child or a more serious illness at any age that requires emergency or hospital care.

Children under 2 years of age, especially those going to childcare settings, experience up to 12 episodes of upper respiratory infections (the common cold) a year. Children over 2 years experience 2.4 episodes of illness (defined here as activity restriction or medical visit) a year. Approximately 1 in 8 children in a given year has at least one emergency room visit with about 1 in 30 children hospitalized at least once in his or her lifetime. For children described by their parents as being only fair or poor in health over the course of 1 year, 80% have at least one office visit, 5% have at least one emergency room visit, and 15% are hospitalized at least once (Owens et al., 2008). About 70% of children in elementary school miss some school each year because of illness, but 15% miss more than 1 week (Bloom, Cohen, & Freeman, 2010).

As the need to respond in a timely fashion to childhood emergencies gained importance, a system with designated roles and handoffs called the Emergency Medical System (EMS) was developed. *Prehospital care* refers to emergency assistance before a child reaches a medical facility. A 911 call triggers a response by EMS providers whose training ranges from emergency medical technicians (EMTs) who have 120–150 hours of training, or paramedics who have 1,200–1,800 hours of training with a 2-year degree. The skill set of EMTs and paramedics includes basic life support, intubation, placing IVs, and cardioversion. Although only about 10% of EMS cases involve children, special federal Maternal and Child Health funding has promoted and improved EMS care for children. Other potential first responders, such as police, firefighters, or volunteers, usually have about 40 hours of training in first aid and CPR. Their role is to provide rapid response and stabilization pending the arrival of more highly trained individuals.

EMS response times vary from a few minutes to more than an hour depending on the location of the incident and the availability of EMS. A pediatric trauma score is used to assess the severity of injury and determines if the child should be treated in an emergency department (ED) that is designated as a pediatric trauma center. Guidelines of care of children in the ED include supporting parents to be with their child during invasive procedures and even at bedside resuscitation as desired.

### *Injury and Traumatic Stress: An Example of a New Morbidity Related to Health Care*

Injuries are the single largest cause of morbidity and mortality among children in the United States (CDC, 2011b), which has led to a shift to recognize the common



psychological effects of injury in addition to the physical (De Vries et al., 1999; Stoddard & Saxe, 2001). Almost 25% of children who were injured in traffic accidents and 15% of their parents had a diagnosis of posttraumatic stress disorder (PTSD). This disorder is associated with older age at the time of traumatic exposure and the presence of parent PTSD. A third of road traffic accident child victims had PTSD compared with 3% of children with sports injuries (Stallard, Velleman, & Baldwin, 1998). Female gender, previous experience of trauma, and subjective appraisal to life threat are associated with presence of PTSD. Almost 90% of children who were admitted to the hospital after a traffic injury and 83% of their parents had at least one symptom of acute stress disorder. Almost 30% of hospitalized injured children had clinically significant symptoms of a stress disorder (Daviss et al., 2000), and 12.5% of these children had PTSD 1 month after injury. Burn injury, which involves painful dressing changes and permanent changes in his or her body's appearance, likely explain the high rate of over 50% of burn-injured children with posttraumatic symptoms (Stoddard, Norman, & Murphy, 1989). Psychological interventions and therapy are complex but beneficial to children exposed to nonrelational traumatic events (Forman-Hoffman et al., 2013).

## CHILDREN WITH CHRONIC ILLNESS

Many children with conditions that once were universally fatal now survive into adolescence, early adulthood, and beyond. *Children with special health care needs* (CSHCN) is defined as children "who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition that will also require health and related services of the type or amount beyond that required by children generally" (McPherson et al., 1998). They include children with ADHD, asthma, autism, cancer, cerebral palsy, cystic fibrosis, sickle cell anemia, depression, and diabetes, for example. Approximately 15% of all children have a chronic condition with about a third of these conditions considered to be moderate or severe. Most chronic problems are life-long, but others like food allergy or asthma can remit; only about 25% of children with asthma had wheezing that persisted from childhood to age 26 (McPherson et al., 1998). CSHCN need ongoing care in addition to standard well-child care including frequent monitoring of signs and symptoms of their disease, specific interventions to prevent or manage complications of their illness, and often acute care in an emergency department

or hospital for severe episodes of the illness leading to 3 times the average number of physician contacts (Wise, 2012). In this section we will review issues related to the care for children with chronic conditions.

## Health Care Framework for Children With Chronic Conditions

The traditional approach to children with chronic conditions or CSHCN has been categorical; classification is based by the affected organ system or diagnosis and is best understood through the use of the term *chronic disease*. This approach uses etiology, pathophysiology, signs, symptoms, and treatment as guiding principles. Chronic disease is: long in duration; has a protracted clinical course; can be of multifactorial etiology; may or may not have a definite cure; has gradual changes over time; has a common pattern of evolution (Bentzen, 2003). Chronic disease can be congenital or acquired and either communicable (i.e., HIV/AIDS) or noncommunicable (most all diseases previously mentioned). Dimensions that differentiate chronic disease are listed in Table 15.4. Related terminology includes the World Health Organization (WHO) definition of *impairment* as an abnormality in physical structure or function of the body, while a *disability* is an impairment that restricts activity. A *handicap* is a disability that causes an individual to be limited by society.

Alternatively, even though specific challenges vary by disease, a noncategorical approach of a chronic illness emphasizes the common challenges faced by children with chronic illness, including stress and coping with disease, identity formation in terms of illness, financial stressors, adherence, self-care, and self-esteem. (Pinquart & Shen, 2011b).

## Attention-Deficit/Hyperactivity Disorder: An Example of Identification and Management in Primary Care

Learning and behavioral problems are the most common chronic problems of children. Attention-deficit/hyperactivity disorder (ADHD) is a chronic condition and the most common neurobehavioral disorder of childhood affecting 7%–10% of school-age children in the United States (Froehlich et al., 2007; Merikangas, He, Brody, et al., 2010). It is characterized by significant difficulties with inattention or hyperactivity and impulsiveness, or more commonly, a combination of the two. Symptoms, which may include an inability to sit still, restlessness, interrupting others, making careless errors, difficulty sustaining attention, failing to finish tasks, difficulty organizing,

**TABLE 15.4** Dimensions for describing a child with a chronic health condition

Duration of condition	Brief -----Lengthy
Age of onset	At birth-----Acquired
Limitation of age-appropriate activities	None-----Unable to Perform
Visibility of condition	Not Visible-----Highly Visible
Level of support needed	Minimal-----Substantial
Life expectancy	Typical-----Shortened
Course of illness	Stable-----Variable-----Progressive
Developmental Skills:	
Motor skills	Not Impaired-----Extremely Impaired
Language and communication	Not Impaired-----Extremely Impaired
Sensory modulation	Not Impaired-----Extremely Impaired
Social/emotional skills	Not Impaired-----Extremely Impaired
Cognition	Not Impaired-----Extremely Impaired
Adaptive skills	Not Impaired-----Extremely Impaired

Source: Adapted from "Pediatric Chronic Illness," by E. C. Perrin and M. C. Starr, 1993, *Journal of Learning Disabilities*, 26(7), pp. 426–427.

forgetfulness and fidgetiness (*DSM-5*; American Psychiatric Association [APA], 2013b), must be identified as present in two or more settings/environments.

In 2006, there were an estimated 7 million ambulatory care visits for ADHD (Schappert & Rechsteiner, 2008). Boys (13.2%) are more than twice as likely as girls (5.6%) to be diagnosed with ADHD (CDC, 2012), but the highest rates of parent-reported ADHD diagnosis are noted among children covered by Medicaid. ADHD is associated with almost 3 times as many peer problems, 6 times as many emotional and conduct problems, and the child with ADHD is 9 times more likely to have interference with home life, friendships, classroom learning, and leisure activities (Strine et al., 2006). Children with ADHD are also at increased risk of physical injury, with a 10% higher probability of accidental injury and a 7% higher probability of injury resulting in inpatient hospitalization (Leibson, Katusic, Barbaresi, Ransom, & O'Brien, 2001). Children and adolescents with ADHD often have other comorbid psychiatric disorders, including, depression, anxiety, and learning disabilities (Larson, Russ, Kahn, & Halfon, 2011).

ADHD is a highly inheritable disorder involving catecholamine metabolism in the cerebral cortex (Biederman & Faraone, 2005) with additional impact from environmental factors. Factors associated with the development of ADHD include prematurity and low birth weight, prenatal exposure to alcohol and tobacco, and head trauma (Braun, Kahn, Froehlich, Auinger, & Lanphear, 2006; Keenan, Hall, & Marshall, 2008; Knopik et al., 2006; Lindström, Lindblad, & Hjern, 2011).

A primary care clinician should initiate an evaluation for ADHD for any child 4 to 18 years who presents with academic or behavioral problems and symptoms of inattention, hyperactivity, or impulsivity (Subcommittee on

ADHD, 2011). The core symptoms must be confirmed and comorbid problems must also be assessed and ruled in or out. Evaluation using *DSM* criteria can be made using readily available behavior rating scales. The Vanderbilt ADHD Diagnostic Parent Rating Scale is an example of such a measure commonly used and has a sensitivity of .80, specificity of .75, positive predictive value of .19, and negative predictive value of .98 (Bard, Wolraich, Neas, Doffing, & Beck, 2013).

Treatment of noncomplicated ADHD takes place in the primary care setting consistent with the chronic care model and medical home (Subcommittee on ADHD, 2011) and consists of a combination of pharmacotherapy, referring for behavioral modification and parent training, and advocating for families to work with schools to develop appropriate educational accommodations for their child. The NIMH-funded Multimodal Treatment of Attention Deficit Hyperactivity Disorder (MTA Cooperative Group, 1999a) study was a multisite study designed to evaluate the leading treatments for ADHD, including behavior therapy, treatment with stimulant medications, and the combination of the two. It found that combination treatment and medication management alone were both significantly superior to intensive behavioral treatment alone and to routine community care in reducing ADHD symptoms with benefits lasting for as long as 14 months (MTA Cooperative Group, 1999a). Regarding other functional areas, (e.g., anxiety symptoms, academic performance, parent-child relations, and social skills), combination treatment was consistently superior to routine community care, whereas medication alone or behavioral treatment alone were not (MTA Cooperative Group, 1999a, 1999b). Frequent visits and monitoring are required to titrate an effective dose of medication to maximize the reduction in ADHD symptoms

while monitoring and minimizing potential medication side effects. Additional investigation in the development of self-regulation is gaining prominence in applications for behavioral training and management, but is not covered here. For further information on early social interaction and the emergence of self-regulation, see Thompson, Chapter 6, this *Handbook*, Volume 3.

*Cystic fibrosis* (CF) is a serious genetic disorder that involves persistent pulmonary infections, pancreatic insufficiency, elevated sweat chloride levels, male infertility, and a reduced life expectancy. In the 1980s life expectancy of people with cystic fibrosis was 14 years. Through better diagnostic measures (newborn screening now accounting for as much as 30% of diagnosis with 80% of patients diagnosed by the age of 3) and better biomedical treatment (vaccinations, antibiotic therapies, pancreatic enzyme and nutritional supplementation, and emerging studies on gene therapy), life expectancy for people in the United States affected by CF has greatly increased with the median predicted age of survival of about 35 years in 2009 (Cohen-Cymberknoh, Shoseyov, & Kerem, 2011; Costa et al., 2011).

As the life expectancy for people with CF increased, further aspects of CF as a chronic illness have emerged including the implications the disease has on development and human behavior. Children with CF, like many other children with chronic diseases, have experiences that differ from their biomedically typically developing peers. They have numerous clinic visits in both primary and subspecialty care with the addition of ancillary services such as clinical nutrition. They suffer from symptoms of their CF (e.g., cough, fatigue, poor growth, lung and sinus infections) and from side effects of some of their medications (e.g. swelling from steroids). They can have frequent hospital admissions for pulmonary exacerbations and significant infections and may need to have surgical placement of gastric tubes for supplemental overnight nutrition; both affect children's presence (or absence) at school and their range of daily activities.

### Technology-Dependent Children

A small subset of children with CSHCN are "technology dependent" because they rely on life-sustaining medical technology and typically require complex, hospital-level, nursing care. The reliance on machinery varies. Children require feedings through a mechanical pump connected to a gastrostomy tube (G-tube). Some children on mechanical ventilators face respiratory failure if their equipment fails, leaving the daily care for these children and their families

complicated. They often reside in acute or subacute facilities such as pediatric intensive care units or hospitals for special care, although some live at home.

The prevalence of technology dependent children is increasing. Twenty percent of children discharged from a large children's hospital in 2000 were found to depend on a medical device in some manner. One percent of these children were dependent on a tracheotomy, a surgically created hole through the front the neck and into the windpipe (Feudtner et al., 2005). A study of home-ventilated children in the state of Utah found a prevalence of 6.3 in 100,000 children dependent on home mechanical ventilation in 2004 (Gowans, Keenan, and Bratton, 2007).

When care for these children takes place at home, family members have many responsibilities not usual among most families. They must be trained in how to troubleshoot the machinery as well as in more-than-basic CPR if the machinery stops working. They must have plans in place for potential power outages, evacuations, and other emergencies. They must coordinate between medical aides in the home and be prepared for transportation to clinic visits and urgent care for both routine and unplanned emergencies. Often the care of these children is so complex that many parents spend the majority of their day (and devote their identity to) caring for their child.

### Impact of Chronic Illness on Children

Children with chronic illness face disease-related challenges in addition to the daily developmental challenges of childhood. Children have to learn to cope with the impact of the diagnosis and symptoms of their chronic disease and they have to adapt to daily hassles such as frequent medical appointments, learn how to take daily medication, and live with restrictions in diet or activity. For example, an oncology patient who is immunocompromised cannot go outdoors or eat any uncooked foods due to risk of infection. Both the symptoms and daily hassle have an impact on academic, psychological, and social functioning.

### Development and Identity Formation

A child's response to a diagnosis of a chronic illness depends on several factors including temperament, personality, developmental stage, cognitive abilities, the specific disease at hand, and family environment. Infants and toddlers have little understanding of their illness, but developmentally are beginning to develop trust and an overall sense of security. As part of their care they may experience pain, restriction of motion, and separation from parents, all of which pose challenges to their development.

Parental presence and engagement in their care can buffer most adverse effects.

Preschool children face the challenge of developing independence and autonomy, which can be affected by being in the hospital, adjusting to medication schedules, or missing school and other social environments with their peers. For example, children with spina bifida overall show considerable developmental resiliency, but they appear to be at greater risk for exhibiting delays in autonomy development (Friedman, Holbeck, DeLucia, Jandasek, & Zebracki, 2009). Children may also try to counter lack of control by challenging limits set by parents.

Early-school-aged children are developing a sense of mastery over their environment. They may cognitively understand what it means to get or be sick, but magical thinking may cause them to misinterpret the cause of illness. For example, some children may feel that they are being punished for doing something wrong or not doing something they should have, and therefore have become ill (Schonfeld, 1993). Certain attributions may lead to long-term beliefs and behaviors that create difficulty for children as they get older (Sossin & Cohen, 2011).

Older school-aged children and young adolescents are more capable of understanding their illness and its treatment, but they face increasing developmental challenges in terms of independence, mastery, and identity formation. Restrictions may prevent them from attending school and other social activities. Children with chronic diseases are perceived by their parents to display more submissive behavior than their healthy peers. Certain disease characteristics, physical restrictions, and pain are associated with restricted social activities, but not with other measures of social peer interaction. Children with chronic illness are more vulnerable to problems with social development (Meijer, Sinnema, Bijstra, Mellenbergh, & Wolters, 2000). Data regarding self-concept in children with chronic diseases remains inconclusive. In two studies, compared to controls, children with asthma reported similar self-concepts (Hamlett, Pellegrini, & Katz, 1992; Hazzard & Angert, 1986). Other studies show the self-concept of children with physical disorders lower than that of healthy children; however, these differences were no longer significant when compared to another normative group following careful matching (Boekaerts & Röder, 1999).

Along with emerging independence, an important developmental task for older adolescents and emerging adults is identity formation. The study of identity development in adolescence with chronic diseases remains a fairly neglected area of research. These adolescents face continued struggles with control and emerging

independence. They may neglect to take medications, follow special diets, or check blood sugars (see the section "Medical Adherence"). When chronic illness begins in adolescents they may struggle with disruptions to educational and vocational plans and emerging intimacy and serious relationships. More so, as typically developing peers are increasingly independent, parents who have been very involved in a chronically ill adolescent's care for many years may find it difficult to let go of their role as primary caregiver (see the section "Adolescence and Health Care Transition").

Identity differences between adolescent and young adults with Type 1 diabetes and their nondiabetic peers found that youth with diabetes scored lower on proactive identity exploration (Luyckx et al., 2008). Different combinations of exploration and commitment to values are referred to as identity statuses. The same identity types and status emerged in young adults with diabetes as did with their nondiabetic peers, but identity statuses of the diabetic youth were related to diabetes-related problems, depressive symptoms, and illness coping. A strong sense of identity to diabetes-related problems and depressive symptoms is modulated by adaptive and maladaptive coping.

Peer relationships are important for identity formation. A study of children and adolescents with congenital heart disease (CHD) found these adolescents to be as competent as children without CHD in addressing the tasks of identity formation due to supportive peer relationships (Rassart et al., 2012).

### *Academic and Neurodevelopmental Functioning*

Diseases such as sickle cell disease, spina bifida, and epilepsy may have central nervous system abnormalities that have direct impact on cognition, attention, and other functions, thus impairing academic performance (Fowler, Johnson, & Atkinson, 1985; Fowler, Davenport, & Garg, 1992). Some treatments for diseases such as cardiac surgery or radiation to the brain, especially in the case of CNS cancer, can also cause neuropsychological deficits that impair learning (Albers, Bichell, & McLaughlin, 2010; V. A. Anderson, Godber, Smibert, Weiskop, & Ekert, 2000). Children treated with chemotherapy for non-CNS cancers can also show neurocognitive problems (F. S. Anderson & Kunin-Batson, 2009; Hill, Ciesielski, Sethre-Hofstad, Duncan, & Lorenzi, 1997). In one of the few prospective studies starting in early infancy, more, but different neurodevelopmental deficits were seen in select mental and verbal functions compared to a matched control group of children without chronic illness (Bornstein et al., 2012). It remains to be determined whether



these deficits will impair functioning over time beyond potential contributions of social/emotional factors associated with cancer. Chronically ill children also experience a higher than average rate of school absenteeism; however, research on school performance in these children is inconclusive.

### ***Emotional Functioning and PTSD***

Children with a chronic disease had more behavior problems compared to children without, normative groups, and controls with acute illness (Turkel & Maryland, 2007). There is a higher level of internalizing problems among these children (Pinquart & Shen, 2011b). Signs of depression, somatic complaints, social withdrawal, and increased levels of anxiety have also been found (Worchel, Rae, Olson, & Crowley, 1992). One specific and important psychological impact of chronic illness is the potential development of posttraumatic stress disorder (PTSD) which can occur in response to any life threatening, painful, or perceived to be life threatening or painful experience including medical treatments, cancer, intensive care, organ transplants, or other painful medical procedures.

Through an effort to identify the important psychological response to medical treatment, the term pediatric medical traumatic stress has been coined (Kazak et al., 2006) to better elucidate the psychological and physiological responses of children and their families to pain, injury, serious illness, medical procedures, and invasive and frightening treatment experiences. These responses are often related to the child's subjective experience rather than the objective severity of the medical event and involve symptoms of "arousal, re-experience, and avoidance" similar to a posttraumatic stress disorder. Beyond the type of medical trauma, other factors including sudden or gradual onset of intensity and length of exposure or likelihood of recurrence, affect a child's experience and the development of these symptoms. Responses vary in intensity and can be adaptive or disruptive to functioning. Most patients are resilient to such consequences, but it is important to identify those children who do experience such symptoms. Children might report feeling like the traumatic event is happening again, and get upset when something reminds them of it or the event pops in their mind before they go to sleep or in their dreams. Statements suggesting arousal symptoms include "I can't concentrate or sleep. I'm always afraid something bad will happen." Avoidance includes statements such as, "I block it out and try not to think about it or I try to stay away from things that remind me of it," and finally dissociation, which might include, "I can't even

remember parts of it. It felt unreal like I was dreaming" (Cohen & Scheeringa, 2009).

Posttraumatic symptoms have been documented in children from a variety of life-threatening medical illnesses especially transplants and cancer (Stuber, Shemesh, & Saxe, 2003). Transplant recipients have many sources of traumatic stress: prior life-threatening illness, the transplant procedure itself, and medical problems associated with recovery. Posttraumatic symptoms are significantly greater in a liver transplantation compared to chronic medical illnesses or routine surgical procedures (Walker, Harris, Baker, Kelly, & Houghton, 1999). High rates of PTSD symptoms in children who experienced liver transplantation are associated with nonadherence to treatment regimen due to avoidance (Shemesh et al., 2000), demonstrating a perpetuating threat to life in some children.

Studies of children with severe medical illnesses (non-cancer or transplant) yield inconsistent findings; some studies have reported relatively high rates of posttraumatic symptoms, whereas others have reported similar rates to comparison groups of children. The child's perception of life threat and the intensity of medical/surgical treatment appear to be emerging as important risk factors. The studies that have reported low rates of posttraumatic symptoms assessed children many years after the trauma, when the perceived life threat is likely to be significantly diminished (Pynoos et al., 1987).

Advances in medical sciences are blurring the distinction between an acute life-threatening illness and a chronic disease. Many forms of cancer and HIV/AIDS are now considered chronic diseases. It is not known, with the exception of transplantation and cancer treatment, which medical or surgical procedures constitute "a threat to the physical integrity of self." Can relatively common procedures, such as lumbar puncture or even venipuncture, ever reasonably be considered a traumatic stressor? Most importantly, what are the behavioral and pharmacologic strategies that reduce risk if a child developing traumatic symptoms in response to a disease and/or treatment?

### ***Social Functioning, Bullying, and Vulnerable Children Syndrome***

Children with chronic disease face social repercussions related to their condition. They have to learn how to navigate social systems to advocate for themselves in terms of their condition. This can pose a set of challenges for children, especially for adolescents where social capital is of utmost importance. A high school student with a severe peanut allergy has to choose to sit at a potentially

stigmatized “nut-free” table in the cafeteria and has to carry a cumbersome pair of EpiPens (a self-injecting device that administers epinephrine into the thigh muscle when used) when going out with friends. A child with asthma might have to ask an adult, perhaps a complete stranger, to stop smoking a cigarette while in his or her presence.

In general, children with chronic illness are at increased risk of being socially isolated. Peers might have misconceptions about their disease, whereas the child might experience misperceptions of isolation or increased anxiety leading to social isolation. The responses of peers to chronic illness range from avoidance to fascination leading to isolation or potentially negative attention such as bullying. Chronically ill children may also self-isolate, because they feel different from peers and therefore modulate and limit their social behaviors.

Social isolation varies among children with chronic illness, but difficulties are seen in peer relationships for some diseases and may be related to physical appearance and to restrictions in activities (Spirito, DeLawyer, & Stark, 1991). The presence of a medical device, a child who has visible seizures, or a child with alopecia (hair loss) from cancer treatment all feature traits and behaviors that separate ill from healthy children in the social milieu of school settings.

There are a growing number of studies on the prevalence of bullying among children with special health care needs. Adolescents with disability or chronic illness are more likely to be victimized than their peers even when confounding variables are controlled (Sentenac et al., 2011). Furthermore, having a behavioral, emotional, or developmental problem is associated with both bullying others and being a bully victim.

A special aspect of “social” impact is the *vulnerable child syndrome*, which was coined to describe children whose parents perceive them as uniquely susceptible to medical problems because of a prior life-threatening illness. The criteria for vulnerable child syndrome include (a) a real or imagined event in the child’s life that the parent considered to be life-threatening, (b) the parent’s continuing unrealistic or disproportionate belief that the child is especially susceptible to illness or death, and (c) the presence of symptoms in the child that appear disproportionate to the apparent level of illness or impairment (Weitzman, 2010). The initial description registered the impact on parents and children following significant illness during the newborn period that many parents were told that their child would die. Although the children recovered from their initial illness, parents subsequently viewed them as uniquely susceptible to later illness or even

death. Parents within the first year were hypervigilant and anxious manifesting as overprotective behaviors. Often they would not leave their child with anyone but the other parent to ensure the child’s health and safety. In many cases, mothers never left their infant. In the second year parents had problems related to limit setting and would not say “no” to their children because they were grateful their children were alive. Without necessary limits these children developed a tendency to behave out of control, sometimes even hitting their parents, which the parents silently permitted. In the third and fourth year, parents worried about their children’s health and complained of a variety of psychosomatic symptoms in their children, such as poor appetite, headache, and tiredness. Finally, during the early school years, many children had episodes of school refusal because they were unable to separate from their parents (Green & Solnit, 1964).

It is now recognized that vulnerable child syndrome can occur even in the absence of life-threatening events. In the perinatal period, false positives on one of many prenatal screening tests, transient acute newborn medical problems, or spending time even for observation in the NICU are associated with vulnerable child syndrome (Forsyth & Canny, 1991). It is also likely that parents’ perception of the child’s vulnerability may be related to parents’ own previous experiences including difficulty conceiving, recurrent miscarriages or a stillbirth, and any other event that raises concern for fetal loss during the pregnancy. Low socioeconomic status, parent mental health problems, and specific trauma history are also risk factors to parental perception of vulnerability (Thomasgard & Metz, 1995). Vulnerable child syndrome represents special perturbation to the ongoing adaption and relationship between parent and child and presents with symptoms related to parent-child relationships. For example, parents may complain of a child’s refusal to sleep through the night, but further investigation might reveal the parents are waking the child multiple times each night to check on him or her and ensure the child’s safety. Overall, vulnerable child syndrome results in negative outcomes for the parent, child, and the dyad. Any minor complaint may result in a visit to the doctor’s office or emergency room leading to high and unnecessary health care utilization. In that setting, the doctor’s assurance as to the minor nature of the illness is not helpful to these parents because their specific worry is not the present illness but their perception of their child’s unique susceptibility to illness, and that this episode could quickly lead to something more serious. Unfortunately, parents do not always express this “second agenda” and

leave dissatisfied with care, leading to repeated potentially negative encounters with health care professionals as second opinions are sought. To prevent or attenuate vulnerable child syndrome, clinicians need to be aware that real or imagined life threatening events, especially in the perinatal period, can have such consequences on parents. They need to assure parents that specific events during pregnancy or newborn illness are self-limited and explicitly state that they do not carry any future risk for illness. Clinicians who perceive parents as unusually anxious about a child's minor illness should ask parents whether their concern is related to a previous event or illness. This allows the clinician an opportunity to address parents' "second agenda." Eliciting parents' concerns along with a complete history and a meticulous physical exam with explicit feedback about normal findings can be reassuring to parents.

### Medication Adherence

The effectiveness of efficacious medication is limited if not taken as prescribed. Similar to adults, approximately 50% of children and their families do not follow medication plans as prescribed, which increases risk for relapse, increased morbidity and mortality, and the development of drug resistance depending on the treatment. Common reasons given by parents for lack of adherence (sometimes referred to as noncompliance) include forgetting to administer the medication, resolution of symptoms, misunderstanding instructions, refusal by the child, medication side effects, busy schedules, and cost of the medication (Rapoff, 2010). Simply put, adherence issues are not black and white.

Many of the nonfinancial barriers to adherence can be captured under the heading of *health literacy*, the set of skills people need to obtain, process, and use information to function effectively in the health care environment. Severity of an illness does not guarantee medication adherence. Even children with life threatening conditions such as cancer, bone marrow, and renal transplants are at risk of treatment failure because of suboptimal adherence with drug therapy. The more complex and demanding the drug treatment regimen is, the more likely there will be decreased compliance. The duration, frequency, and intermittent nature of medication are important contributors to lack of adherence. This is especially true when medication schedules are inconvenient or out of synch with the normal family routine (Modi et al., 2012).

A number of strategies address a lack of medication adherence. The most important is to help children

beginning at young ages, 4 years and older, to be responsible for their own medication (Modi et al., 2012). This is a common practice for children with diabetes on an insulin regimen, but is often neglected for children with most other diseases. Electronic monitors have been developed to assess adherence and remind patients when to take their medication (Rapoff, Belmont, Lindsley, & Olson, 2005). The most common type of such monitoring is a microelectronic circuit that records the date, time, and frequency of opening medication containers or using inhalers. Output from such devices can reveal important medication taking behaviors, leading to more individualized and specific behavioral interventions. These systems continue to be developed using smart phone technology, improving the processing and recording of information. However, as with all electronic monitors, these systems are subject to problems including malfunction, misuse, and a lack of specificity (uncertainty as to whether opening the container actually results in the use of the medication, or recording the correct dose).

Other strategies to improve adherence include development and use of longer acting medications, either in pill, skin patches or injectable form to ensure the child receives required medication. As an example, long-acting insulin lasts 24 hours. Newly developed forms of insulin will last up to 7 days. Similarly, challenges of adherence have shaped the form and delivery methods for birth control medications. Although beneficial, these longer acting medications and devices pose their own set of behavioral challenges. Children with diabetes still need to learn to count carbohydrates and administer short-acting insulin as needed, and adolescents equally need to be reminded about the importance for barrier protection to prevent sexually transmitted infections. Global strategies, such as *directly observed therapy*, have effectively reduced drug resistance for tuberculosis by promoting adherence through administration and documentation of medication by trained personnel (Moonan et al., 2011). A number of simple behavioral strategies are effective at improving adherence, including self-monitoring, contracting, reward-based privilege programs, and the use of cues or reminder techniques, such as putting an inhaler next to a tooth brush so child patients will use medications at the same time that they are brushing their teeth.

### Chronic Illness and Pain

In the not too distant past, barriers to pain management in children included myths, such as those purporting that

children, especially infants, do not feel pain as adults do because of an “immature nervous system.” Further contributors to poor pain management included a lack of standardized pain assessment and treatment protocols and a fear of potential adverse effects of analgesic medications including respiratory depression and addiction.

Acute pain resulting from injury, illness, and/or medical procedures is the most common type of pain experienced by children followed by chronic and recurring pain associated with underlying medical conditions. Important advances have been made in understanding the neurobiology of pain. Pain, or nociception, results from tissue injury leading to autonomic, hormonal, and metabolic changes transmitted from a peripheral nerve to the central nervous system. These pain signals occur as early as 26 weeks of gestation and are followed by later developing inhibitory pathways (Berde & Sethna, 2002). The concepts of pain and suffering, however, transcend a simple sensory experience with its biologic underpinnings. Pain management uses medications to affect the biological pathway while its primary aim is to eliminate suffering.

### ***Pain Assessment***

Assessment of pain is an important first step to determine the type and dose of medication for both initial and ongoing pain management. The current standard for pain assessment is a simple self-report numeric pain scale equating pain from 0 to 10. This scale was developed for adults, but it is accurate for older children with moderate to severe pain. Other approaches include a visual analog pain scale, the Wong-Baker FACES scale, which uses “smiley faces” appearing with a range of expressions from happy to distressed. Pain in newborns can be evaluated using various neonatal pain scales consisting of facial expressions, level of crying, breathing patterns, movement of the extremities, and state of arousal.

### ***Pain Management in Medical Settings***

Pain management practices are influenced by environmental, developmental, cultural, and contextual factors and involve consideration of longer-term impact and goals. Inadequate sedation and pain control that may worsen a child’s reaction to later medical procedures. Even minor painful procedures such as circumcision or blood draws in the newborn nursery show increased pain and distress months later during minor painful procedures such as immunization (MacLaren & Cohen, 2007); children as young as 2 years have been shown to be able to recall urethral catheterization 6 months after the procedure (Kleiber

& McCarthy, 1999). The understanding of the emotional and contextual aspects of pain and suffering has resulted in important environmental and psychological approaches to reduce pain and anxiety. Use of videos, music, light wands, image projectors, and other distracting devices reduces stress anxiety and promotes comfort.

The availability of a child life specialist in outpatient and emergency department settings during painful procedures began over the past ten years with great success. Besides comforting children through play and distractibility, Child life specialists spend time with children and teach them what to expect during a procedure, showing them specific medical tools that will be used, and offering them choices appropriate in creating a comfortable stress reducing environment, demystifying unfamiliar medical procedures, and offering a feeling of control, all which ameliorate anxiety and anticipated pain and are now considered as necessary as a pharmacological approach to treating pain. Behavioral strategies as simple as blowing bubbles or a pinwheel to strategies as sophisticated as self-regulatory activities including deep breathing or even hypnotic approaches are very successful in reducing the perception of pain (Srouji, Ratnapalan, & Schneeweiss, 2010).

Optimal pain medication and control make children more comfortable and compliant in the evaluation and treatment of a pain producing medical problem. Pharmacological treatment involves matching the need of a patient with appropriate medications and dose. In the case of pain with an obvious fracture or with a patient with sickle cell disease, oral analgesics are not sufficiently quick acting. However, placing an IV can take additional time. Intranasal Fentanyl is being used increasingly because it is delivered as a mist, immediately absorbed, and provides pain relief within minutes. When added to IV Propofol and topical anesthetics for lumbar puncture or bone marrow aspiration, Fentanyl has been shown to reduce movement of the patient during the procedure, the dose of Propofol required, and recovery time. Protocols provide the dose for weight of appropriate medications ranging from acetaminophen and ibuprofen for mild to moderate pain to oral opiates for more significant pain. In some select cases, especially children suffering from multisystem trauma, suboptimal doses of opiates are used so as not to obscure important neurologic findings from the clinical examination.

The development of patient-controlled analgesia (PCA) was an important advance in acute pain management among older hospitalized children and adolescents. With a ceiling set to prevent overdose, patients push a button to give themselves a predetermined dose of pain medication



into their IV. Advantages of PCA over traditional muscular injections or oral medication include the following: (a) there is virtually no delay between the perception of pain and delivery of analgesia; (b) patients can fine-tune their doses to avoid excessive sedations as an overly sedated patient will be too drowsy to activate their PCA device; (c) patients do not have to “prove” their degree of discomfort; and (d) PCAs support autonomy allowing adolescents to have some control over their body.

Topical anesthetics such as lidocaine when mixed with other compounds further reduce pain. Some need to be placed about 60 minutes prior to use while others such as vapocoolants are applied immediately before the placement of IVs, immunizations, and other minor procedures. Pain control and anxiolysis (control of anxiety) also decreases movement leading to better accuracy during suturing lacerations or conducting MRIs and CT scans.

Studies suggest that sugar water (12% sucrose) effectively diminishes a newborn’s response to painful stimuli during blood draws, circumcision, and injections. This effect appears to be strongest among newborns and decreases gradually over the first 6 months of life (Stevens, Yamada, & Ohlsson, 2010). Skin-to-skin contact between a mother and an infant (including breastfeeding), as well as swaddling during a procedure, also decrease behaviors associated with pain (Harrison, Beggs, & Stevens, 2012).

### ***Chronic and Intermittent Pain***

The most common pain syndromes in children are recurrent abdominal pain and headaches. Some patients respond to reassurance and treatment with simple medical approaches, but a significant proportion goes on to develop varying degrees of chronicity that are difficult to treat. Other than pain syndromes, children can experience pain due to underlying chronic diseases, such as cancer, juvenile rheumatoid arthritis, and sickle cell disease.

Pain management teams and services involve interprofessional collaboration from pediatrics, anesthesiology, psychiatry, psychology, and child life specialists. Novel approaches to pain management include use of smart-phones to monitor in real-time to better understand pain patterns as they relate to everyday activities. Additional approaches include massage, acupuncture, biofeedback, and medical hypnosis.

### **Siblings of Children With Chronic Disease/Illness**

Chronic diseases of childhood have implications for the psychosocial well-being of siblings. Some siblings suffer

the consequences more than others; some do not experience any negative outcomes. The variables that have an impact on siblings include, among others, age, gender, temperament, and family system. At the most basic level, disease management of the affected child can interfere with many aspects of daily life for siblings. They may have to take on a care giving role for their affected sibling or may have to care for other children in the household as their parents are preoccupied with the ill child. A child may have to avoid social outings or be restricted in their attendance of social activities.

Early studies concluded that siblings were “a population at risk to experience psychological difficulties” but suggested that there could be positive benefits to growing up with an ill sibling, such as developing greater compassion (Faux, 1993; Hannah & Midlarsky, 1985; McKeever, 1983; Packman, 1999). While earlier studies continued to suggest siblings are found to be more caring, mature, supportive, responsible, and independent (Houtzager, Grootenhuys, & Last, 1999), more recent information shows that siblings face internalizing or externalizing problems and less positive self-attributes than healthy comparisons (Vermaes, van Susante, & van Bakel, 2012). Regardless of the specific chronic disease experienced by the affected child, parents report more negative symptoms for siblings than do the siblings themselves (Sharpe & Rossiter, 2002; Vermaes et al., 2012). For example, parent ratings of siblings can be confounded by other factors such as their mental health (Wood, Rijdsdijk, Saudino, Asherson, & Kuntsi, 2008).

Disease severity (mortality) itself does not seem to exert a direct effect on psychosocial functioning of siblings. Illnesses, however, that affect the day-to-day functioning of the ill child such as bowel disease or cancer are associated with more negative effects on siblings compared to illnesses that do not affect daily functioning (Sharpe & Rossiter, 2002).

A consistent finding has been the relation between age of the sibling and their quality of life and self-attributes (Vermaes et al., 2012). The older the sibling, the lower their observed quality of life has been reported across multiple domains. Adolescent and school aged siblings of children diagnosed with cancer report a lower quality of life at 1 month post-diagnosis with adolescent girls reporting more emotional problems compared with peers. At 6 months, the quality of life of adolescent-aged siblings remained relatively impaired (Houtzager, Grootenhuys, Hoekstra-Weebers, & Last, 2005).

This moderation effect of age suggests that younger siblings are less vulnerable than older siblings in regard to

their self-attributes, but not to internalizing or externalizing problems. It is plausible that younger siblings' naïve concepts of the affected sibling's disease shelter them from the effect of negative self-attributes, whereas older children who can cognitively appreciate the reality of disease and may be expected to be more self-sufficient, assume a care giving role and/or take on more domestic responsibilities (Houtzager et al., 2005; Labay & Walco, 2004). This effect could also be a reporter artifact. In most studies, parents are the likely reporters for young children's functioning, whereas older siblings provide a higher degree of self-report data (Vermaes et al., 2012).

### Parents of Children With Chronic Disease/Illness

Parents of children with chronic disease can experience numerous stressors related to caring for their affected child. Each specific chronic disease features its own profile (see Table 15.1) of demands on time, finances, and stress on family relationships related to unpredictability and uncertainty of the disease at hand. There is decreased self-esteem and efficacy as parents' senses of themselves as providers and protectors are severely challenged by their child's illness. As family routines are disrupted, marital and other family relationships become severely strained.

The time of diagnosis involves feelings similar to those experienced by individuals grieving the death of a loved one, described as loss for their "hoped for child" (Barnett, Clements, Kaplan-Estrin, & Fialka, 2003) and parents experience grief, shock, denial, and disbelief followed by anger directed toward the medical staff and professionals involved with their child. Parents may wonder whether it would be better if the child dies and consequently experience feelings of guilt. After diagnosis, many parents question how they themselves had acted during the prediagnosis period. They wonder whether they could have done more to expedite their child's diagnosis. Some express regret and guilt about their perceived failings in the role of guardian of their child's well-being and begin to doubt their adequacy as parents (Riedesser & Wolff, 1985).

Caregiving strain and self-perception are important determinants of the health related quality of life, adjustment, and coping skills of parents of children with cancer (Klassen, 2010). It is not fully understood why some parents cope well with the stress of caring for their child and others do not. Traditional approaches investigating the psychosocial aspects of chronic childhood illnesses such as cancer have tended to characterize parents' experience of their child's illness in terms of "maladjustment"

and "coping," rather than the ongoing process of adaption through which parents learn to sensitively read and respond to their child's signals and needs (Young, Dixon-Woods, Findlay, & Heney, 2002). Learning to care and advocate for their children becomes a significant part of the lives of these parents (Jerrett, 1994). Over time, parents proceed in sharing and ultimately championing the management of their child's disease in addition to becoming an advocate (Swallow, 2008). Parents' levels of adaptation to their child's diagnosis have been found to predict both family well-being and their child's attachment security (Barnett et al., 2003).

PTSD has been described as well in parents after their child has experienced an acute trauma or life threatening illness, chronic disease, and in parents who have a premature infant in the NICU. The reported incidence of PTSD in these situations ranges from 21% to 25% when a child has been in the NICU or PICU to 30% for parents of children with leukemia (Kazak & Barakat, 1997). It appears to occur more often in mothers than fathers. When parents suffer from PTSD it not only affects their health but their relationship with their children, interactions with the health care team, and may also interfere with helping a child manage his or her own illness. Parents of leukemia survivors also experience significantly higher levels of post-traumatic symptoms than do the parents of comparison children (Barakat et al., 2003). Fully, 83% of children with cancer and PTSD had mothers with PTSD.

The needs of parents of children with chronic illnesses can be conceptualized within three major themes: (1) the need for normality and certainty; (2) the need for information; and (3) the need for partnership (Fisher, 2001). Hospital care in the United States has responded by implementing family-centered rounds (FCR) described as "interdisciplinary work rounds at the bedside in which patient and family share information and the management for that day" (Sisterhen, Blaszk, Woods, & Smith, 2007). This new approach improves communication between families and physicians, allowing for shared decision-making, family satisfaction, and more efficient use of health care resources (Kuo et al., 2012).

### Adolescence and Health Care Transition

The transition from pediatric to adult care involves more than a new doctor and clinical setting. It involves the inherent attitudes and expectations of the respective health care teams. As generalizations go, pediatric health care teams tend to be supportive because their patients start out as dependent. Adult health care providers expect

independence and self-management and they perceive their role is to provide information and recommendations and not “hand holding.” The basic challenge for patients goes from being nurtured and relatively dependent in the pediatric care system to needing to be able to function independently as an adult in the adult care system. This transition occurs ideally in an uninterrupted manner and is needed for approximately 90% of youth with chronic health conditions who survive to adulthood (Blum, 1995).

Implementing systems that can bridge care between the pediatric and adult worlds is a relatively slow process, with most patients drifting away from pediatric care rather than having an explicitly mapped and effectively transitioned plan. A study in Texas showed a spike in death rate of youth with sickle cell disease from Ages 18 to 24, which overlapped with the time spent in the gap between leaving pediatrics and establishing adult medical care (Bryant, Young, Cesario, & Binder, 2011). Recognition of the need for transitions need is relatively new, due in part to the increased longevity of those living with chronic illness.

There are multiple reasons for gaps in transition in the contemporary U.S. medical system (Cooley & Sagerman, 2011). Pediatric care providers and their staffs have limited training in implementing the transition process; there is little evidence-based research on strategies or programs that are effective at coordinating the handover of care and transferring information from the pediatric site to the adult care site. Adult providers are often inadequately prepared to care for young adults with complex chronic conditions due in part to their training. For example, children with a surgically corrected congenital heart malformations tend to be cared for by pediatric cardiologists until ages 30 or more because most adult cardiologists are not trained or do not have experience in the care of these children as adults. Similarly, developmental disorders including autism and cerebral palsy are beyond the training and comfort of most adult clinicians.

Transitions are potentially emotionally charged events for parents and patients because of strong relationships with their pediatric clinicians. While most pediatric leaders support transition efforts, some are stating that pediatric specialists should expand significantly the age of children under their care until the medical problems exceed their expertise.

Youth with special health care needs and their parents need to be involved in discussions regarding the process of transition to adulthood as early as 12 years of age depending on the individual patient. Child patients need to be introduced to developmentally appropriate self-care and work

on activities of daily living beginning before 12 years of age. The timing of these discussions should be individualized. Expectations for independent living, education, continuing education, vocation, reproduction, expectancy, and other life concerns should be discussed with parents and other appropriate caregivers well before it is time for any of these new activities and functions. The health care transition should also be part of a broader mastery planning that includes such issues as educational attainment, career choices, and independent living needs. A child’s interests, personal strengths, level of skills, ability, and desires should be at the core of the transition process. Overall, this process involves transitioning medical care for all *three* categories of health care: primary care, emergency room care, and ongoing specialty care (Cooley & Sagerman, 2011).

### Specialized Care for Children With Chronic Illness

Children with chronic illness may have need to access two unique types of health care delivery: home care and palliative, or end-of-life, care.

#### Home Care

Advances in medical technology have allowed a growing number of children with chronic conditions to be cared for in the community. The “Medicaid Model Home and Community Based Waiver” in 1982 allowed children to receive funding from home care if the costs were less than or equal to hospital costs. This act began the trend towards earlier hospital discharges, and ill patients began to enter the community more quickly.

Skilled nursing services and home health aides are the most commonly used home care service for children. Nurses can administer medications and change devices in the home while home health aides can assist with basic personal care needs such as bathing and feeding. Rehabilitation services such as occupational, physical, and/or speech and language therapies can be offered in the home. Personal care attendants are unlicensed care givers who provide care for children at the training and direction of the family with services ranging from assistance with activities of daily living (e.g., meal preparation, shopping, dressing) to more complicated nursing care skills. Each of these services requires a lengthy approval process and the number of hours of service each day vary according the disease, availability of resources and state laws.

*Palliative care* is treatment that serves patients with life threatening or life limiting diseases to enhance the comfort and the quality of their life. Palliative care is not limited to

children near death and consists of providing active total care of the child's body, mind, and spirit, while giving support to the child's family. *Hospice care* is similar, but for patients with a prognosis of 6 months or less. The expected outcome in palliative care is relief from distressing symptoms, easing of pain, and enhancing the quality of life rather than necessarily affecting the underlying disease. Palliative care requires iterative assessment and evaluation of treatment options in the context of the child's symptoms and their family's desires and values (WHO, 2008). Palliative and hospice care can be provided in the home, nursing home, residential facility, or inpatient unit.

### THE FUTURE OF CHILDREN'S HEALTH CARE: USHERING IN THE THIRD ERA

The future of child health care will continue to evolve to treat children's health problems but expand efforts to promote wellness and functioning. Personalized medicine will mean that many chronic diseases will be treated based on molecular markers that will identify specific medications to reduce side effects and enhance efficacy. Information technology will become more important, including use of quality metrics for quality improvement to coordinate care, health systems will be better integrated and families will have more information available to them to become health conscious consumers. Technological tools and organizations (such as Collaborative Chronic Care Network's work with inflammatory bowel disease management) that are devoted to care of patients with complex health care needs, will enhance and increase patient, parent and family engagement to promote self-management, patient/family activation and empowerment, especially for children with chronic illness (C3N, 2013). Broad scale standardized data collection holds important ability to study outcomes, treatment responses and identification of best practices. Information technology systems in emergency departments will become early warning systems for new epidemics of infectious diseases.

Medical problems with increasing prevalence have emerged and evidence-based strategies will need to be developed for identification and treatment. Finally, better understanding of the impact of early experiences on lifelong health will lead to wellness efforts to prevent or attenuate both child and adult diseases.

#### Medical Problems With Increasing Prevalence

An epidemic is a widespread occurrence of an infectious disease in a community at a particular time. Throughout

history epidemics have traditionally consisted of infectious diseases with intermittent outbreaks occurring affecting thousands to millions. HIV (the human immunodeficiency virus) and the ever-changing influenza virus remain two influential epidemic infectious diseases in first world nations today.

The 21st-century "epidemics" are now primarily non-infectious in nature as, for example, with asthma. Thirty years ago, a rise in rates of childhood asthma was identified and thought to be triggered by immunological system alterations through exposure to asthma producing allergens, although viruses are still considered a potential contributor. Mass media is a relatively new factor that contributes to what parents worry about. A recent survey of 1,000 parents showed they were primarily worried about healthy nutrition, obesity, lack of exercise, healthy growth and development, safety and injury prevention, and mental health issues (Garbutt et al., 2012). These parents were also asked to rank what they believe are top health concerns for children and adolescents in their community; allergies, lack of exercise, asthma, ADHD, Internet safety, obesity, smoking, and bullying were identified as important problems by 57%–70% of parents.

This section will review a selection of problems, all with a behavioral/developmental or emotional component, with significant or rising prevalence in primary care in the United States. These problems reflect the continued need for health care providers to develop skills to address these problems and to advocate for new community resources and policy at local and national levels (Satcher, Kaczorowski, & Topa, 2005).

#### *Childhood Depression and Anxiety*

Approximately 13% to 20% of children living in the United States experience a mental disorder in a given year, with surveillance between 1994 and 2011 demonstrating the prevalence of these conditions to be increasing (Perou et al., 2013). Many of these children are reared in environments characterized by early life stress (Merikangas, He, Burstein, et al., 2010). For additional discussion of the development of mood and anxiety disorders, see Cummings & Valentino (Chapter 15, this *Handbook*, Volume 1).

Depression affects 12% to 25% of adolescents (Lewandowski et al., 2013). Information for younger children is less readily available. Data from National Survey of Children's Health 2007 (NSCH, 2007) demonstrated a parent report point prevalence of depression in children 3 to 5 years of 0.5% and for children 6 to 11 years of 1.4%.



Likewise, the lifetime prevalence of depression was found in children 3 to 5 years to be 0.6% and for children 6 to 11 years to be 2.3%. In adolescents, female-to-male ratio approaches 2:1. Data from the 2007 NS-CSHCN (NSCH, 2007) indicates for children 3 to 17 years of age, there is a point prevalence of 3% and lifetime prevalence of 4.7% for anxiety. Phobias are diagnosed in 2.6% of children 4 to 17 years old (Perou et al., 2013). These disorders are also associated with a higher risk of suicide, which was the second leading cause of death among children 12 to 17 years old in 2010 (CDC, 2011a).

Mood and anxiety disorders in childhood are both commonly found together (Angold, Costello, & Erkanli, 1999; NRC & IOM, 2009) and can recur over time (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Kessler et al., 2012). These disorders are also often comorbid with and affect adherence to treatment for other health problems including asthma, food allergy, and other chronic health problems (Delmas et al., 2011; Friedman & Morris, 2006; Pinquart & Shen, 2011a; Pinquart & Shen, 2011b; Roy-Byrne et al., 2008). Children with depression and anxiety also have an increased risk of substance use, abuse, criminal behavior, sexual risk taking behaviors, and lower educational attainment (Perou et al., 2013).

The U.S. Preventive Services Task Force (USPSTF) and the National Institute for Health and Clinical Excellence (NICE) both recommend universal screening of 12- to 18-year-olds for depression in primary care (USPSTF, 2009; NICE, 2005); although successful implementation of screening has previously been poor (Halpern-Felsher et al., 2000; Klein et al., 2001). Screening tools have been developed for primary care including the Patient Health Questionnaire (PHQ-2, PHQ-9), the PHQ for Adolescents (PHQA), and the Beck Depression Inventory–Primary Care Version. Their use has been successful with adolescents (Lewandowski et al., 2013). All adolescents who screen positive for depression should have an assessment of potential for harm to self and others (Birmaher et al., 2007).

Treatment for childhood and adolescent depression and anxiety is complex. Pediatric clinicians should always offer support, counseling, and problem solving for adolescents with very mild depression symptoms. However, for younger children and adolescents with more moderate or severe levels of symptoms, refer to appropriate behavioral health services. Evidence-based treatment for depression includes cognitive-behavioral therapy, interpersonal psychotherapy, or pharmacotherapy with selective serotonin reuptake inhibitors (SSRIs) (Lewandowski et al., 2013).

### *Autism Spectrum Disorder*

Autism spectrum disorder (ASD) is defined by significant delays and impairments in reciprocal-social communication and interaction associated with restricted and or repetitive behaviors and interests. These symptoms manifest in early childhood although they may not be recognized until later. Symptoms, which vary in intensity and impact, include abnormal social interactions to a lack of social initiation, failure of back and forth conversation, poor use of eye contact in social interaction, lack or delays in imaginative play, stereotyped speech including echolalia, adherence to routines, excessive resistance to change, highly restricted/fixated interests that are abnormal in intensity or focus, and hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of environment (APA, 2013b).

The criteria for ASD have evolved with the release of the *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (*DSM-5*; APA, 2013b) in May 2013. *DSM-IV* criteria consisted of impairments in three major domains—socialization, communication, and behavior—and were consolidated into two primary domains for *DSM-5*: (1) deficits in social communication and social interaction, and (2) restricted, repetitive patterns of behavior and interests. *DSM-IV* featured criteria for three separate diagnoses of autism spectrum disorders: (1) autistic disorder, (2) Asperger syndrome, and (3) pervasive developmental disorder, not otherwise specified (PDD-NOS). With the release of *DSM-5* these three separate disorders have been consolidated into a single diagnosis of autism spectrum disorder. The new diagnostic criteria for autism were designed to encourage earlier diagnosis while also allowing for diagnosis of children whose symptoms might not be fully recognized until their social demands exceed their capacity (APA, 2013a).

As of 2008, the CDC's estimate of the prevalence of ASDs in the United States is 1 in 88, or 1.13% of children (Baio, 2012), which is increased from data in 2000 when the prevalence was estimated to be 1 in 150 children. ASD is almost 5 times more common among boys (1 in 54) than among girls (1 in 252) (Baio, 2012) and occurs in all racial, ethnic, and socioeconomic groups.

There is an ongoing trend for children in the United States to be diagnosed at earlier ages with as many as 18% of cases identified by Age 3, however most children are not diagnosed until after Age 4 (Baio, 2012). This trend likely represents the impact of developmental screening in pediatric primary care (see earlier this chapter) in addition

to heightened parent and media awareness. Primary care clinician's also coordinate with subspecialists to manage many of the common comorbid disorders including ADHD, anxiety, behavior problems, intellectual disability, seizures, feeding problems, toileting problems, sleep disorders, and genetic disorders (Simonoff et al., 2008; Zafeiriou, Ververi, & Vargiami, 2007).

### **Obesity**

Obesity is a growing epidemic faced by children in the United States today and is associated with an array of additional health problems. Body mass index (BMI) is the measure using a child's weight and height to determine whether a child meets criteria for being overweight or obese. Unlike for adults, when the BMI alone can be used to determine their status, for children age- and sex-specific percentiles for BMI are used because children's body composition varies as they grow (Barlow & the Expert Committee, 2007). Overweight status is defined as having a BMI between the 85th and 95th percentile for children of the same age and sex, while obesity is defined as having a BMI at or above the 95th percentile (Barlow & the Expert Committee, 2007).

Approximately 17% (12.5 million) of children and adolescents aged 2 to 19 years in the United States meet criteria for obesity; since 1980, obesity prevalence among children and adolescents has almost tripled (Ogden & Carroll, 2010; Ogden, Carroll, Curtin, Lamb, & Flegal, 2010). Latino American boys and African American girls are significantly more likely to be obese than their counterparts. Causes include factors that increase caloric intake like portion size, sugary sweet beverages, marketing, lack of affordable nutritious food, and decreased physical activity, including TV viewing (for further information please see Calvert, Chapter 10, this *Handbook*, this volume), more sedentary activities, especially computers, decreased school physical education, and unsafe neighborhoods, which all can result in parents limiting their children's outdoor activity (Lumeng, Appugliese, Cabral, Bradley, & Zuckerman, 2006). Obesity is a known risk factor for the development of diabetes during childhood and cardiovascular, endocrine, and other adult health problems. Obesity can have a significant impact on the mental health of children including eating disorders, body image issues, bullying, and depression.

A four-staged stepwise care approach for weight management in pediatric primary care is recommended (Spear, 2007). First is prevention through counseling and provision of anticipatory guidance about nutrition, eating behaviors,

and exercise. Second is structured weight management involving use of logs and nutrition guides and frequent follow-up in primary care. Third is the recruitment of a comprehensive multidisciplinary intervention involving clinical nutrition, exercise physiologists, and behavioral health resources. The fourth and final level is tertiary care intervention, which involves consideration of the addition of medication to assist with weight management or surgical intervention such as gastric bypass; this level is reserved for the select few children who do not respond to intensive interventions from the first three levels (Spear et al., 2007).

### **Concussion and Head Injury**

A concussion may be caused by a direct blow to the head, face, neck, or elsewhere on the body with an impulsive force transmitted to the head. It typically results in the rapid onset of short-lived neurologic symptoms with or without loss of consciousness that resolve in a sequential course spontaneously. The term *concussion* is often used in medical literature as a synonym for mild traumatic brain injury (TBI). Each year in the United States, approximately 1.7 million people are diagnosed with a TBI, about 75% of which are classified as mild TBIs/concussions. By the time children reach 10 years of age, 16% will have had at least one head injury requiring medical attention (NCIPC & CDC, 2006).

Although symptoms typically resolve in a matter of weeks, children may suffer from postconcussion syndrome that may last for months or longer (Yeates, 2010). Symptoms can include headache, dizziness, cognitive impairment, and a range of psychological symptoms that may include changes in mood, alertness, anxiety, and PTSD-related symptoms.

Sports-related concussions appear to be common among pediatric and adolescent athletes but the prevalence is unknown. Team and contact sports such as football and ice hockey have the highest incidences of concussion, followed by soccer, wrestling, basketball, field hockey, baseball, softball, and volleyball (Koh, Cassidy, & Watkinson, 2003), but concussion can also occur in individual sports such as gymnastics or diving. Concussions in the high school setting occur more frequently in games than in practice. In coed sports concussion rates are higher for female than male high school athletes. Very little is known about the epidemiology of concussions in middle school-aged athletes and younger children (Jinguji et al., 2012).

Common approaches to treatment include (a) removal from sports and physical activity restrictions, (b) cognitive

rest with restriction such as television viewing, reading, and telephone or computer use, and (c) graduated return to activity. Such limitations pose significant challenges to children, their parents, and their teachers.

To better identify children who suffer concussion without loss of consciousness, there is an increasing trend to obtain either brief or comprehensive individualized baseline neuropsychological/neurocognitive testing of athletes. The challenge presented here is the child's individual desire to return to play. Some children and adolescent athletes report "fudging" their scores so they may return to play sooner. The wisdom, let alone safety, of children participating in contact sports is being widely discussed by parents and professionals. Children athletes (and even their coaches) may often need reminders of the long-term benefits as opposed to short-term gratification when deciding when to return to play (Cantu & Hyman, 2013).

### **Food Allergy**

Allergic conditions (asthma, dermatitis, food or chemical allergy with or without anaphylaxis, and allergic rhinitis) are the most common medical conditions currently affecting children and adolescents in the United States (Stone, 2003). Estimates of the prevalence in the United States indicate that approximately 35% of children under the age of 18 are diagnosed with a form of allergy (Braunam & Lukacs, 2008). The true prevalence of food allergy is unknown. Up to 25% of the general population believes that they may be allergic to some food; however, the actual prevalence of food allergy diagnosed by a provider appears to be 1.5% to 2% of the adult population and approximately 6% to 8% of children (Perry & Pesek, 2013). Food allergy affects nearly 6 million children in the United States and has been shown to limit social interactions and impair children's quality of life due to the ubiquity of food where children live, learn, and play (Dyer & Gupta, 2013).

Children and adolescents with allergies seem to have more symptoms of anxiety (Friedman & Morris, 2006). Anaphylaxis is an acute allergic reaction resulting in immediate symptoms of diarrhea, bleeding, vomiting, and bronchospasm. The pressure on parents to be vigilant about such exposures is significant and they live with a fear of death for their child due to inadvertent exposure (Broome-Stone, 2012). For children with such a severe allergic reaction, a mild level of anxiety can be adaptive because such children are less likely to participate in risk behaviors potentially exposing them to a known antigen (Mandell, Curtis, Gold, & Hardie, 2005). However, there is an increasing prevalence of debilitating anxiety which

imposes unnecessary restrictions on an affected child's life, preventing them from engaging in important daily activities at home, at school, or socially and need to be addressed (Manassis, 2012).

### **The Future of Prevention and Wellness**

The third era of health care will move beyond treating disease, child mortality, and rates of disease and, to a much greater extent than in the past, will emphasize wellness. An Institute of Medicine Report defined children's health as the extent to which they are able to develop their potential, satisfy their needs, and develop capacities to engage their world. The challenge for the future will be to operationalize and measure these important functional outcomes based on these goals (NRC & IOM, 2004). To accomplish these goals the child health system will require a more robust primary care that have information technology systems able to integrate and coordinate care not only within the health care system but also with the community health and human development systems. This includes schools, childcare centers, home visiting programs, family support programs, and other social scaffolding programs that are necessary to optimize a child's health and development. Physicians will need more training in child development, motivational interviewing, communication, and other areas related to child well-being.

A key component, especially for low-income families, will include mechanisms that complement public and community health efforts to address their material environment and social determinants of health. While Bright Future pediatric guidelines emphasize the importance of viewing the child in the context of the family and community, future guidelines for a patient-centered medical home (PCMH), especially for low-income families, will require routine identification of basic unmet material needs (e.g., food, employment, benefits, education, and pediatric visits) and will depend on access to the knowledge and resources available through appropriate community services (Garg et al., 2007). Presently, colocation of services such as the Women and Infant and Children program (WIC) within PCMH facilitates access, but such efforts need to be expanded to include housing programs, child training centers, GED programs, and food pantries to enhance access. If not fully colocated, linkages to community resources ensure access and need to be developed and monitored over time.

Home visiting programs to promote child development and parenting skills as well as assist parents with specific

needs such as school enrollment, employment, and accessing social safety net programs, have expanded and should be linked and potentially colocated in clinics to facilitate synergy of action and communication between the health care team and the home visiting team. Healthy Steps is an example of colocated child development services in a pediatric practice that increased home visits, child development screenings and advice, and selective parenting practices (Zuckerman, Parker, Kaplan-Sanoff, Augustyn, & Barth, 2004). Healthy Steps is the only one of eight federally approved programs for funding home visiting that is based in pediatric practices and needs to be expanded.

Primary care efforts to ensure health are undermined when patients do not receive the benefits and protections of laws that address a host of influential social determinants. Studies reveal that low-income households have an average of one to three unmet legal needs related to income, housing problems, employment, and family issues such as guardianship or domestic violence. Medical-Legal Partnerships, an innovation in health care delivery, have lawyers on site in health care settings, which improves the system by being able to address social determinants of individual patients and develop practice and policy changes for all members of the community (Sandel et al., 2010). Medical-Legal Partnership practices screen patients to identify problems including: Income Supports, housing and utilities related disputes, education, employment, immigration status, and personal/family stability and safety. The potential for doctors and lawyers working together to go beyond individual patients to promote community health has been demonstrated (Klein et al., 2013). While MLPs are in over 200 practices nationally, further expansion will help more families address legal problems they face.

Unlike the single clinician of the past, the future PCMH will consist of a physician-led team that may include some or all of the following trained care coordinators: nurses, nurse practitioners, nutritionists, social workers, developmental specialists, and other ancillary providers. To be family-centered, PCMH will solicit input from families, whether by surveys or advisory boards, not only about care of their children but also how the practice can best meet their needs. Examples of PCMH team tasks for newer problems listed in the preceding section are as follows. For obesity: (a) track and facilitate regular follow-up, (b) engage families in the process of adopting healthier life styles, and (c) coordinate with nutrition, subspecialists, schools, and other community resources. For ADHD: (a) referral to community resource for psychosocial aspects

of management, (b) coordinate with schools, therapists, etc., (c) track medication use, and (d) track follow-up visits to monitor behavioral and academic progress, blood pressure, and growth.

### *Two-Generation Approach to Child Health Care*

A life course approach to promote childhood wellness in health care will need to involve a two-generational model of health care since both child outcomes and women's health are strongly linked to each other and to upstream social factors (Zuckerman & Kahn, 2000). Social factors associated with child outcomes have found sizeable effects for women's health (usually depression) as a potential mediator of social factors (Duncan, Brooks-Gunn, & Klebanov, 1994; Korenman, Miller, & Sjaastad, 1995). Male or fathers' health is also important but little data exists except for mental health problems, smoking and violence and its impact directly or indirectly on the mother and children. At the present time, women's health is approached as a series of distinct risk factors posing threats to specific child outcomes. Many intervention and policy opportunities are missed as a result of the failure to recognize that many child health disparities have their origins further upstream in the general health of women starting with the health of girls during their childhood.

Prenatal care affords only a limited period of time to initiate intervention to prevent poor birth outcomes, since many women's health conditions exist prior to conception, and their impact often begins well before any effective prenatal care intervention can be put in place or be effective. Effective treatments for such problems as domestic violence, depression, poor nutrition, cigarette smoking, drug and alcohol use, and infections require timely and prolonged therapies that are not well served by prenatal care that starts after conception and often ends with a single postpartum visit.

Even women who enter the health care system prior to conception face substantial fragmentation of their health services (Weissman & Olfson, 1995). Obstetrician-gynecologists tend to be more thorough in the provision of Pap smears, breast examinations, and mammography, while other adult care providers are more likely to offer cholesterol screening, smoking cessation aids, and screening and initial treatment for depression. The likelihood that a woman sees both a gynecologist and an internist increases with higher income and more years of education. Reproductive health care services, such as family planning and abortion, are also frequently splintered from mainstream medicine (Gottlieb, 1995).



The availability of effective clinical interventions for such problems as depression (Katon et al., 1995), smoking (Hurt et al., 1997), drug addiction, and emergency and nonemergency contraception (Glasier, 1997) increase the need to reevaluate existing systems of health care for women. Since many mothers may not seek help for their own needs, the pediatric or other child health clinician has a special opportunity to identify and engage women with depression, violence exposure, cigarette smoking, and other potentially endangering conditions. For example, two simple questions have been shown to identify depression in mothers with 83% sensitivity and 90% specificity (Kroenke, Spitzer, & Williams, 2003, p. 1287): "Over the past two weeks, how often have you been bothered by any of the following problems: (1) Loss of interest or pleasure in doing things and (2) Feeling down, depressed or hopeless?" Because depressed individuals are not well motivated to take care of themselves, the challenge to the health care team goes beyond identification to support a successful referral to a mental health specialist for evidenced based treatment (Zuckerman & Kahn, 2000).

A similar opportunity exists for identification of intimate partner violence (here, IPV) to obtain safety and intervention for both mother and child (Bair-Merritt et al., 2013). While child health clinicians may not be able to prevent initial exposure to IPV they can at least attenuate the health and emotional consequences. Since children over the age of 3 may be traumatized by direct IPV discussions in their presence or may later repeat the conversation with the perpetrator, providers are encouraged to screen the mother alone or use general questions about how parents work out arguments or how would they describe their relationship with their partner (i.e., a lot of tension, some tension, or no tension). When IPV is disclosed, community IPV programs are an important resource to protect women and children's safety. Children should be referred to trauma informed health providers for evidence based interventions, such as trauma focused cognitive behavioral therapy, that reduce children's trauma symptoms (Groves, 1999).

Preventing unplanned pregnancies is another example of a pediatric opportunity for the future. While the studies have limitations, unintended live births suffer a disproportionately high rate of maternal and infant health problems, interfere with young mothers completing their education, and reduce the financial and emotional resources available to support and nurture existing children (Brown & Eisenberg, 1995). Helping to prevent unintended pregnancies; 3.3 million per year, 43% of which end in abortion (Finer &

Zolna, 2011) is another opportunity for a two-generational model of pediatric primary care. Long-acting reversible contraceptive (LARC) methods, as well as intrauterine and other implantable devices, are over 99% effective, safe, and save money, making access to these methods an important goal for the health care system (Zuckerman, Nathan, & Mate, 2014). In the future, pediatricians in primary care should ask mothers about their child spacing plans since an unplanned pregnancy may dilute a family's emotional and financial resources to that child. Beyond providing information and referral, pediatricians could be trained to provide implantable devices because the procedure is relatively simple and quick. Placement of IUDs takes more time and training and will need a referral.

## CONCLUSION

The past century has seen significant changes in the epidemiology of children's disease and in the ecosystem of children's health care. The progressive understanding of the causes of child health problems as rooted in an interaction between social-environmental and biologic factors will inform the future. Children's social, emotional, and developmental functioning and well-being are even more important because they are most vulnerable to the confluences of factors and forces affecting their health. Supporting the health and wellness of children has the potential to alter the trajectory of disease throughout life span and improving the health and wellbeing of adults as well as children.

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## CHAPTER 16

# Children and the Law

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## INTRODUCTION

This chapter provides a broad overview of the legal regulation of children and the extant or potential use of developmental science to guide legal decision making. The term *legal regulation* includes two related considerations. The first concerns *protections* afforded to minors, and the degree to which these protections are subordinate to the rights of parents, or can otherwise be curtailed in service of state goals. Many such protections are independent

of developmental status (e.g., rights to privacy, due process, protection from harm), so legal policy in their regard has typically been grounded in nondevelopmental considerations, such as the need to balance protection of the child with the rights of parents to discipline their children, or the need to ensure that a child's rights do not interfere with a school's educational mandate. In some contexts, minors are afforded greater protection than adults, and developmental science can inform discussions of the degree to which such additional protections are justified.

In other contexts, minors receive less protection (primarily in situations involving autonomous decision making), and developmental science can again be brought to bear.

The second aspect of legal regulation focuses on the *responsibilities* of minors, including the extent to which minors should be granted autonomous decision-making authority and held accountable for their decisions. In certain respects, such considerations overlap with the protective ones, since limitations to minors' autonomy or accountability can be viewed as legal protections (i.e., protecting minors from the consequences of their own poor judgment). Regardless of how they are categorized, these questions are specifically concerned with the extent to which minors differ from adults in ways that warrant differential treatment under the law. Because questions about the presence or magnitude of differences between minors and adults are most likely to be raised when the minors are relatively older, and their abilities not so obviously different from those of adults, the focus of these debates is almost always on the regulation of adolescents. It is in this context that developmental science has been, and can be, most informative. For example, the science of adolescent development can inform judgments regarding whether minors of a certain age are able to provide informed consent for medical procedures, participate in their own defense during a trial, understand the terms of a legal contract, or know their legal rights in different contexts. The same developmental considerations also may influence judgment regarding whether minors are better candidates for rehabilitation than adults, or should be subject to adult-scale punishment for antisocial behavior.

Any discussion of legal policy must be placed within a broader social context. In this chapter, we focus our attention on legal policy regarding children and adolescents within the United States, and further narrow our discussion to issues sufficiently important (and controversial) to have reached the highest level of jurisprudential analysis, the United States Supreme Court. We acknowledge that an analysis of a different country's approach to the legal regulation of children might paint a very different portrait, but a full discussion of the legal treatment of children and adolescents internationally would be prohibitively lengthy and complex, because laws and social standards vary considerably from nation to nation. Indeed, even within the United States, many laws that concern minors vary from state to state (e.g., the age at which offenders can be tried as adults). Focusing on judicial decisions at the federal

level allows us to consider standards of legal treatment that apply broadly within a single legal framework, and permits us to examine the ways in which developmental science might inform legal decision making across a range of topics. Thus, the discussion that follows will consider existing U.S. Supreme Court decisions, examining the differences and commonalities in the treatment of children and adolescents across a variety of legal domains, specifically in light of current understanding of development.

Legal policy in the United States regarding children and adolescents has evolved gradually based on conventional wisdom, philosophical reasoning, and practical considerations codified into law and distilled into precedent via legal opinions. Developmental science sometimes informs such opinions, but frequently the relevant research, by necessity, must be designed to address presumptions behind existing legal precedent. Specific standards often vary depending on the issue, but legal presumptions about the inherent immaturity of children and adolescents are numerous. With rare exceptions, those below the age of legal majority (which is 18 in all but four states) are neither expected nor permitted to be responsible for their own welfare. Minors' rights in school and their access to offensive material are limited in many respects, as the court has taken the stance that states have a primary responsibility to properly socialize the nation's youth. In medical settings, adolescents are considered unable to provide informed consent for most health care procedures; the consent of a parent or legal guardian is typically required. Under contract law, minors receive special protection, because immature individuals are more easily taken advantage of; minors are allowed to enter contracts but may disavow them at any time. The contemporary juvenile justice system is based on the premise that many transgressions committed by minors are the result of poor or immature judgment, and that minors can be rehabilitated more easily than adults (i.e., that their character is less mature, or less fully formed).

Although younger children and older adolescents are often lumped together as "minors," adolescents are treated differently than younger children in some contexts. In recent years, the prevailing view of adolescents as inherently less mature than adults has been challenged on several fronts. Public outrage over juvenile violence has provoked debate about the longstanding practice of treating adolescents within a separate justice system, and instances of young defendants being tried as adults have become commonplace. In discussions of adolescent health



care, it has been argued increasingly that teenagers are sufficiently mature to provide informed consent in a variety of situations, and several states have enacted statutes that authorize minors to consent for health care or that allow adolescents to seek treatment without parental consent for health problems related to sexual activities, drug and alcohol use, or psychological distress.

Developmental science has led to significant improvements in our understanding of the underpinnings of mature decision making and is increasingly used to inform legal arguments that historically have relied less on empirical evidence than on conventional wisdom. Chief among the key developmental findings related to the evolution of maturity during adolescence is a nuanced understanding that maturity involves a combination of different factors, such as cognitive sophistication, the ability to resist peer pressure, the capacity to resist impulsive urges, and the forbearance to consider factors such as long-term consequences, the viewpoints of others, and the recommendations of experts. These various competencies and characteristics emerge and stabilize at different times during adolescent development and have differential effects on decision making, depending on the context. For example, impulsivity and peer pressure play a greater role in decisions related to delinquent behavior than they do in decisions regarding medical treatment. Therefore, to the extent that we wish to rely on developmental science to inform where we draw age boundaries between adolescence and adulthood for purposes of public policy, it is important to match the policy question with the relevant science.

In the sections that follow, we review the ways that the legal regulation of children and adolescents has evolved across a broad array of domains, including the family, school, the justice system, medical settings, and society more broadly. In the section on the treatment of children in family contexts, we note that the relevant legal decisions emphasize protections, leaving little room for developmental considerations. In the section on the treatment of children at school, we similarly conclude that legal decisions grapple primarily with the extents and limitations of students' rights from a paternalistic vantage point, without regard to developmental competencies. In contrast, in the section on the treatment of children in the justice system, we find that developmental science has been a key consideration and has shaped several important legal decisions. In medical decision-making contexts, developmental considerations also play a role, but are often considered secondary to questions concerning the relative rights of minors and their parents. Finally, in other social

contexts, such as those involving contracts, exposure to indecent material, sexual behavior, and the transmission of indecent material via electronic communications, the focus again returns to the protection of children and adolescents (from car salesmen, pornographers, sexual partners, and themselves), and to a debate about the extent to which privacy rights apply to minors' intimate behavior.

## LEGAL TREATMENT OF CHILDREN AND THE FAMILY

Before considering how children and adolescents are treated at school, at the police station, at the doctor's office, or at the bank, we start by considering how they are treated at home, in relation to their family. In the midst of a society of "helicopter parents" where childrearing is considered the primary priority of any parent, with all other duties considered secondary, and with "the best interest of the child" always at center stage, it is difficult to imagine that prior to the early 1800s, children were legally considered to be property or chattel (Hart, 1991), valuable to their parents for their economic contributions, but without any inherent legal rights of their own. (This is not to say they were not loved by their parents. But legally speaking, their status was essentially equivalent to that of livestock.) With unlimited power over their children, parents could ignore, abuse, or abandon them with impunity (Pappas, 1983). Early state law codified parental control to the point of expressly allowing for capital punishment of disobedient children (Horowitz, 1984).

Social norms began to evolve in the 18th century, with parents "almost beginning to consider their children as of the same flesh and blood as themselves" (Bayne-Powell, 1939, p. 1). But the state's role in protecting children did not begin to reflect this shift until the 19th century, with the first reported *parens patriae* court action (in which the state intervenes for the protection of a child against an abusive or neglectful parent) appearing in 1838, and eventually leading to the establishment of the explicitly paternalistic, authoritarian juvenile court system of the first half of the 20th century. More recently, "the best interests of the child" has been adopted as a fundamental principle of the UN Convention on the Rights of the Child (Article 3), referring to "such protection and care as is necessary for his or her well-being" (UN General Assembly, 1989, p. 7). The United States signed the convention in 1995, but has not ratified it.

The gradual recognition of children as having interests worth protecting was obviously a major step forward in

ensuring their welfare. But this recognition has led to conflict in determining who is responsible for defining a child's best interests. When children were livestock, it was simple: children were the property of their fathers, and remained so despite divorce or abuse. But as children's welfare became a priority, legal policy evolved to allow mothers to receive custody, and to allow the state to revoke parental rights to protect a child's safety. A foster care system grew. A juvenile justice system grew. Each was designed with the goal of acting in the child's interests. Yet, despite this focus on the child's interests, there still remain very few situations in which the child is granted direct legal status. They generally are barred from initiating legal proceedings themselves. They may be allowed to express a preference in custody hearings. In every domain related to family law, legal decisions have evolved to protect the interests of children and adolescents, but have stopped short of presuming them to be competent to determine those interests. The history of family-related legal decisions is therefore dominated by decisions made by adults *about* children, rather than decisions in which children are actively involved. Issues relating to "best interests" are distinct and separate from those relating to "self-determination," and courts continue to operate under the presumption that minors are not competent to act in their own interests.

The exception to this general rule prohibiting minors from having independent legal status is the granting of "emancipated minor" status to minors. The conditions under which such status may be explicitly granted by courts will be discussed later in this chapter, and revisited in the portions dealing with medical and social contexts. Youths with "emancipated minor" status are, legally, free from parental control, and thus no longer subject to disputes over custody, adoption, or parent-child immunity laws. As a rule, however, such status is not granted solely on the basis of a youth's demonstrated level of maturity, unless other situational requirements also apply.

In the following sections we review the evolution of the treatment of children in several domains of family law, including custody decisions, foster care and adoption proceedings, the ability of children to pursue legal action against their parents, and the pursuit of "emancipated minor" status. In all but the last, considerations relating to decision-making abilities and maturity play little, if any, role. Nevertheless, a review of these areas provides a useful backdrop for subsequent discussion of the treatment of children in other legal domains. For additional information on the historical perspective of childhood, see Stearns, Chapter 20, this *Handbook*, this volume.

## The Treatment of Children in Custody Decisions

Until the early 1800s, children were viewed as chattel, and fathers were automatically considered to be their owners. Fathers thus had legal claim to any economic output of his children. This provided motivation for fathers to provide support and protection. Mothers, in contrast, had no legal standing in any court action, including divorce. They did not have any presumptive rights regarding child custody or to have continued contact with children, who remained the property of the ex-husband. Parental fitness considerations began to take hold during the early 19th century, along with the emerging role of the court as a protector of the child's interests.

The first case precipitating this change was *Rex v. Greenhill* (1836). A husband had moved out of the marital home to live with his mistress, after which his wife took her young daughters to live with her family for financial support. The husband filed a habeas corpus action for the return of the children, in response to which the wife fled to Europe with her children. The incident prompted Talfourd's Law in 1839, giving courts discretion to grant mothers custody of children under the age of 7, and visitation rights for children of any age. This "tender years doctrine" established an explicit preference for mothers as more appropriate caregivers for young children (with some exceptions), and was further expanded in 1873 to allow mothers to be granted custody of children as old as 16.

The tender years doctrine dramatically shifted the basis of custody decisions in divorce proceedings. Instead of being the presumptive owner of his children, a father had to prove the mother an unfit caregiver if he wished to retain custody. Although the tender years doctrine was established with the best interests of the child in mind, it took almost a century before the doctrine's explicit preference for the mother as caregiver evolved, state-by-state, into a more gender-neutral "best interests of the child" standard. Currently, West Virginia is the only state in which either parent is presumed to have a superior right to child custody.

The Uniform Marriage and Divorce Act (1979) lists factors a judge may consider in reaching a custody decision. These include the mental and physical health of all individuals; the child's adjustment to home, school, and community; each parent's ability to provide food, clothing, medication, and other care; each parent's lifestyle; the child's needs; and the wishes of the parent and the child. The last factor (the wishes of the child) is indicative of a recent trend toward increasing the degree of self-determination afforded to minors. At least 20 states

permit children beyond a specified age to state which parent they prefer for custody. Jurisdictions vary widely, however, in the amount of weight placed on the child's stated preference.

Generally speaking, the evolution of custody law has moved from considering children as commodities to considering their interests, but while children are often allowed to express an opinion, the court ultimately decides what is best for the child.

### **Adoption, Foster Care, and the Termination of Parental Rights**

The above-noted shift in philosophy, establishing the interests of the child as a prime consideration in custody disputes, leads to a new, but related question: To what extent should the state intervene to protect the interests of children in families where there is no custody dispute? On one hand, the state has generally avoided interfering with parents' rights to raise and discipline their children as they see fit. On the other hand, when a child is being severely or chronically maltreated, the state's interest shifts to the protection of the child, and laws now mandate that children be removed from homes in which they cannot live a safe existence.

The appropriate balance between family preservation and child protection has varied over the past several decades. Prior to 1980, children removed from their families frequently spent extended periods in foster care. The federal Adoption Assistance and Child Welfare Act (AACWA), passed in 1980, attempted to prevent unnecessary foster care placements, reunify families when possible, and limit time spent in foster care by encouraging adoption when return to a birth parent is not possible. The law was generally considered unsuccessful, with critics arguing that it focused too much on family preservation (White, Albers, & Bitonti, 1996). In 1997, Congress passed the Adoption and Safe Families Act (ASFA), which requires a permanency hearing within 12 months of a child entering foster care, and requires that a petition to terminate the parent's rights be filed for any child who has spent 15 of the past 22 months in foster care (excepting cases where a relative is caring for the child or there is some other compelling reason that termination would not be in the child's best interests). While the ASFA was designed to prevent children from being repeatedly moved to foster homes and then back to their parents by streamlining the process through which parental rights are terminated,

the drawback of this approach is that parental rights are more often terminated before a subsequent adoption can be arranged, leaving larger numbers of children with no legally recognized parents (O'Laughlin, 1998).

The involuntary termination of parental rights requires a strict standard of proof, in which it must be ruled that parents are *unfit* as parents before their rights can be terminated (*Quilloin v. Walcott*, 1978). Standards vary from state to state, but generally, abuse, neglect, mental instability, drug or alcohol addiction, and incarceration are typical factors that would lead to finding a parent unfit. Because of the irreversible nature of the termination of parental rights, many judges are reluctant to grant terminations (Sommer, 1994).

In most cases, termination of parental rights begins with potential neglect or maltreatment coming to the attention of law enforcement or social service agencies, which then intervene on the child's behalf. As in custody decisions, children's wishes may sometimes be considered when placement decisions are made, but children are not granted formal legal standing. In 1992, after the department of social services decided to remove him from a foster home and return him to his birth parents, Gregory Kingsley (Age 11) petitioned to terminate his birth parents' rights. Gregory was initially successful in terminating his parents' rights, but the Florida appellate court overruled the trial court decision, stating that "unemancipated minors do not have the legal capacity to initiate legal proceedings in their own name" (*Kingsley v. Kingsley*, 1993, p. 782). Similarly, in divorce proceedings, children are prevented from formally intervening on their own behalf. In *Miller v. Miller* (1996), the children involved in a custody dispute employed their own attorney, but the court held that there was no common law basis for intervention of minor children in their parents' divorce action. Generally, although some states allow children direct access to the courts, most children can only gain such access through a guardian ad litem.

### **Children as Plaintiffs, and Parent-Child Immunity**

Protections against the abuse of children have evolved considerably since the 1800s, with courts intervening to remove children from unsafe environments and terminate the rights of unfit parents. However, children have, at the same time, been prohibited from suing their parents, based on a series of state Supreme Court decisions establishing as common law the so-called parent-child immunity rule. In *Hewellette v. George* (1891), Mississippi ruled that minors

could not sue parents for bad acts, holding that the integrity of the family and the best interests of society barred a child from suing for personal injuries sustained at the hands of a parent. In *McKelvey v. McKelvey* (1903), Tennessee denied a child damages from her father, who had criminally assaulted her. Similarly, in *Roller v. Roller* (1905), Washington rejected a suit brought by a child whose father had raped her. Some more recent cases, however, have begun to erode the precedent of the parent-child immunity rule. In *Hoffman v. Tracy* (1965) a Washington state court wrote, "A parent who takes a child in an automobile with him and drives it while he is intoxicated is temporarily abdicating his parental responsibilities and is not entitled to immunity" (p. 327). There is also now federal precedent that children who suffer intentional harm at the hands of their parents can pursue compensation in personal injury actions (*Wilson by Wilson v. Wilson*, 1984). As has been the case with custody and parental rights, it appears that there is a continuing trend, in which the legal system is increasingly willing to overrule the default assumption that parents know best in situations where the parents abuse or neglect their children, and to provide means for the protection of children's interests. By requiring children to be represented by a guardian ad litem, however, courts have generally avoided issues of competence and maturity of judgment that would otherwise come into play in family-related legal disputes.

### Emancipated Minors

The one area of family law where a child's maturity and decision-making abilities have a direct bearing is in the granting of "emancipated minor" status, whereby a minor can be granted legally autonomous status. Such status is generally applied only to minors who, for situational reasons, are understood to be legitimately beyond the reach of parental authority, that is, when a youth has de facto independence from his or her parents. Though the specific applications of this doctrine vary from state to state, emancipated minor status may be awarded based on financial independence, military service, or the adoption of a primary relational role other than "child," either by marrying or by becoming a parent. In the absence of statutes specifying otherwise, common law permits emancipated minors to be treated like adults for most purposes (Garber, 2009; Hill, 2012; Robertson, 2008). Emancipated minors can thus buy and sell property, borrow money, provide medical consent, sue or be sued, or be tried as adults.

### Summary of Legal Regulation of Children in Family Contexts

The gradual evolution of the legal treatment of children and adolescents in family-related matters has been driven largely by concern for their safety and well-being, recognizing a child's right to an existence free of abuse or neglect, but stopping short of recognizing any right to self-determination or independence. Accordingly, the decision-making competencies of minors are not a consideration in most family-related legal contexts. A mechanism does exist for minors to be granted "emancipated" status. In some cases, the maturity of the minor (as evaluated by the judge) is one of the factors considered in determining whether to grant such status. But it is never the only factor, and, in many situations, is not even a necessary factor if certain other conditions (e.g., parenthood) are met. So while developmental science has the potential to inform judges' evaluations of maturity, the factors driving emancipation decisions typically are driven more by practical and logistical considerations, rather than by a youth's cognitive or psychosocial characteristics.

In the sections that follow, similar themes will emerge. The rights of minors are stratified, with protections against harm or mistreatment generally being upheld, but with rights of self-determination, self-expression, or autonomy generally being denied or substantially restricted. It is primarily in the areas where these rights overlap (for example, where denying autonomy could cause harm) that courts have been willing to relax restrictions on self-determination. Absent such circumstances, autonomy-related rights are considered secondary to the rights of parents (to control their children's upbringing) or the priorities of schools (to limit disruptions to the education and development of the broader student population).

## CHILDREN'S RIGHTS AT SCHOOL

Compulsory school attendance laws have made schools a context to which virtually all American children and adolescents are exposed. Given that society relies on schools to educate and socialize its citizens, schools exhibit a pervasive influence on the lives of American youth. Through a series of contentious cases, the Supreme Court has demonstrated its deference to school by taking the stance that, although minors should indeed be afforded some constitutional protections, schools should have the authority to take necessary steps to ensure that they can uphold their primary



goals of educating, socializing, and protecting the welfare of their students.

Two interwoven themes are at issue in the court's discussions of children's rights at school. The first theme has as its focus on the unique mission of schools and the degree to which students' rights in public schools may be curtailed in service of state goals, such as avoiding disruption, protecting youth, and promoting proper socialization. The second theme concerns the degree to which schools may infringe on students' privacy in service of these goals. We focus on how these two themes are manifested in the decision-making process and rhetoric of the most influential school-related United States Supreme Court cases. Specifically, we explore the cases that have reinforced or set limits on public school students' rights in regard to free speech, due process, including search and seizure, and corporal punishment. In general, the Supreme Court has shown much deference to schools with respect to regulating and protecting students, however, the court will rule in favor of students when schools violate student rights to privacy or due process without some minimal threshold of reasonable justification. We also discuss schools' zero tolerance policies, as they relate to due process concerns, and the potential *school-to-prison pipeline* that may result from these and other "get tough" school policies. Developmental science has not made a substantial impact with respect to students' rights in school: the relevant Supreme Court decisions generally focus on the perceived vulnerabilities of schoolchildren, and the need for protection, rather than on issues relating to developmental competencies.

### **First Amendment Rights in Public Schools (Free Speech and Expression)**

U.S. Supreme Court justices have mixed opinions with respect to the First Amendment rights that should be extended to public school students. For example:

It can hardly be argued that either students or teachers shed their constitutional rights to freedom of speech or expression at the schoolhouse gate. (Justice Fortas's opinion in *Tinker v. Des Moines*, 1969)

And almost four decades later:

As originally understood, the Constitution does not afford students a right to free speech in public schools. (Justice Thomas's opinion in *Morse v. Frederick*, 2007)

Although adults enjoy the right to freely and openly express their ideas, students in the public school system

do not have the same rights, at least while involved in school-related activities. There are five Supreme Court cases that have demonstrated the court's position regarding the rights that should (or should not) be guaranteed to public school students. This section takes as its point of departure the landmark case of *Tinker v. Des Moines Independent Community School District* (1969), which was the first and most influential First Amendment case for students. After *Tinker*, in all but one case (*Board of Education of Westside Community Schools et al. v. Mergens*, 1990), the Supreme Court has continued to limit the free speech rights of schoolchildren.

### ***Tinker v. Des Moines Independent Community School District* (1969)**

In *Tinker*, three public school students, Ages 13, 15, and 16, were suspended from school for knowingly violating a school policy that prohibited the wearing of black armbands in protest of the United States' involvement in the Vietnam War. These three students, whose parents knew about their children's decision to wear the armbands, were not allowed to return to school until they removed the black bands. After appeals and hearings in lower courts, led by their fathers, the case eventually made it to the Supreme Court. The issue was twofold: whether the constitutional right of free speech and expression should be extended to children attending public schools, and whether the mission of public schools gives schools a special obligation to override the individual rights of school children. In the end, the court ruled in favor of the students and held that free speech rights of minors in the public school system should be protected except when school authorities have reason to suspect that doing so would interfere with the normative functioning of the work of the school or cause "substantial disruption." In this case, the disclaimer attached to the First Amendment rights for schoolchildren was not based on developmental science, but rather, was a matter of balancing children's rights with the mission of the school and the rights of other students. In support of schools' obligation to provide a safe and supportive environment for all children, the court chose to place restrictions on children's rights of freedom of expression.

The *Tinker* case recognizes that although minors indeed have the Constitutional right of free speech, those rights can be subject to limits not normally applicable to adults. Since *Tinker*, however, the Supreme Court has expanded the definition of "serious disruption," which has correspondingly scaled back students' speech rights.

***Bethel School District v. Fraser (1986)***

The first Supreme Court case to challenge the speech rights established in *Tinker* was the case of *Bethel School District v. Fraser* (1986). The case centered on a sexually suggestive speech delivered by Matthew Fraser, a 17-year-old public high school student, to 600 classmates:

I know a man who is firm—he's firm in his pants, he's firm in his shirt, his character is firm—but most of all, his belief in you, the students of Bethel, is firm. Jeff Kuhlman is a man who takes his point and pounds it in. If necessary, he'll take an issue and nail it to the wall. He doesn't attack things in spurts—he drives hard, pushing and pushing until finally—he succeeds. Jeff is a man who will go to the very end—even the climax, for each and every one of you. So please vote for Jeff for A.S.B. vice president—he'll never come between you and the best our school can be. (*Bethel School District v. Fraser*, 1986, p. 687)

School authorities determined that Fraser had been in violation of a Bethel High School rule: "Conduct which materially and substantially interferes with the educational process is prohibited, including the use of obscene, profane language, or gestures." In response to the speech, school officials suspended Fraser for 3 days and denied him the previously approved opportunity to speak at the graduation ceremony. With support from his mother, Fraser filed a civil rights action. Though lower courts initially ruled in favor of Fraser, citing a lack of proof that the speech violated *Tinker*'s "serious disruption" requirement, the Supreme Court reversed the ruling and held that Fraser's punishment was warranted. The court ruled that, although adults may use offensive speech, public school students are not permitted to use speech that is vulgar or features excessive sexual innuendo, even if the speech does not cause "serious disruption" at school. The court, focusing on the content of the speech and the youthful audience, stated that the *Tinker* criteria were intended to apply to political messages—not sexually suggestive (or morally motivated) messages. The Supreme Court ruled that student First Amendment rights "are not automatically coextensive with the rights of adults in other settings" and that school authorities did, in fact, have the right to shield students from offensive and insulting speech. Fraser's speech was deemed "offensively lewd and indecent" and the court found that his right to subject a captive audience of other children to such messages could be curtailed.

The idea that adults (i.e., public school officials) can—and should—shelter minors from vulgar or offensive speech was not new to the Fraser case. Cases such as

*Ginsberg v. New York* (1968) and *Federal Communications Commission v. Pacifica Foundation* (1978) had already affirmed the parental responsibilities of state officials in some contexts. The common law doctrine of *in loco parentis* provides a standard by which states should protect youth, as parents would, for example, by regulating children's exposure to material that is perceived to be offensive or inappropriate for young people—including obscene material that would be constitutionally protected for adults. This argument emphasizes the court's concern for protecting youth from offensive speech while also teaching young people the boundaries in which ideas and opinions can be expressed in socially acceptable ways. As such, the court has allowed schools to regulate student speech when such speech is either disruptive or viewed as implicitly harmful to other children who are exposed to it.

***Hazelwood School District et al. v. Kuhlmeier et al. (1988)***

The Supreme Court again emphasized its deference to school authorities in *Hazelwood School District et al. v. Kuhlmeier et al.* (1988). The issue in this case was whether public school authorities could censor articles in a student-authored school newspaper that was edited by the teacher of a journalism course and published using school resources for subsequent distribution to other students.

The case involved three high school students who believed the principal violated their First Amendment rights when, based on the content of the articles, he instructed the journalism teacher to delete two pages of text before printing the newspaper. One of the deleted articles described students' experiences with teenage pregnancy, which was a topic the principal believed was inappropriate for younger students. The principal was also concerned that the pregnant students quoted in the article could reasonably be identified, given the information in the story and low prevalence of student pregnancies at the school. The second deleted article concerned students' experiences with their parents' divorce, which the principal believed was unfair to parents referenced in the article (the principal did not realize that the journalism teacher had deleted the student's name from the final draft). The students believed that the articles had been unjustly censored, and that, per the *Tinker* "disruption" criteria, their speech and expression rights had been violated.

Lower courts disagreed about whether the principal violated the students' First Amendment rights, and the case was eventually heard in the Supreme Court. The court ruled that schools are allowed to censor student speech if

the decision to censor is genuinely related to the goals or mission of the school. As in the previous cases, freedom of expression is trumped by the duty of schools to protect students from harmful messages. It was this line of reasoning that allowed the Court to give less emphasis to the *Tinker* criterion of “serious disruption” and focus its decision on whether the school was *required* to promote and disseminate certain student opinions. This decision again underscored the court’s deference to school authorities and its desire to give schools fairly broad discretion when regulating student speech, as long as such regulation is not arbitrary.

### ***Morse v. Frederick (2007)***

Decades later, but in line with the decisions of the *Bethel* and *Hazelwood* cases, *Morse v. Frederick* (2007) resulted in further limitations on minors’ speech rights. At issue in *Morse* was whether students could be punished for off-campus speech perceived to promote illegal behavior. Just before the 2002 Winter Olympics in Alaska, Deborah Morse, the principal of Juneau-Douglas High School, allowed students to leave school grounds (chaperoned by teachers) in order to walk across the street and watch the Olympic Torch relay. While observing the relay, senior Joseph Frederick held up a 14-foot sign that read, “BONG HiTS 4 JESUS.” After Frederick refused to take down the banner, Morse confiscated the sign and gave Frederick 10 days of suspension for violating a school district policy that prohibited the promotion of illegal substance use. Frederick sued, and a round of trials and appeals in lower courts followed, which eventually landed the case in the Supreme Court. In the end, the Supreme Court held that Principal Morse was justified in suspending Frederick, as it was clear that the banner promoted illegal substance use and the school was right to punish students who openly encourage or celebrate unlawful behavior.

### ***Board of Education of the Westside Community Schools et al. v. Mergens (1990)***

Interestingly, though the Supreme Court curtailed minors’ First Amendment rights in the three previously described cases, students’ right to express religious beliefs has been upheld in at least one Supreme Court since *Tinker*. In *Board of Education of the Westside Community Schools et al. v. Mergens* (1990), a group of high school students wanted to add an after-school Bible study group to an existing list of available student clubs. The principal and superintendent denied the request to form the religious group and Bridget Mergens (unsuccessfully) appealed the case to the board

of education. The case eventually reached the Supreme Court, where the court recognized the existence of other “noncurriculum related student groups” (e.g., chess club, swimming club, skin and scuba diving), and concluded that the Equal Access Act therefore prevented the school from denying equal support to the proposed Bible study group. Because the school already allowed groups that were centered on topics that were not a part of the school curriculum, the Supreme Court ruled in favor of Mergens and supported the request to form a religiously affiliated student group. The Court made this decision based on the assumption that high school students can appreciate that just because a group is allowed to meet on school property does not necessarily mean that the school supports or endorses the opinion of the group.

### ***Summary of First Amendment Decisions***

The Supreme Court has given school authorities a great deal of discretion with regard to determining acceptable and appropriate student free speech behavior. In particular, schools are allowed to curtail student engagement if the speech has the potential to cause “serious disruption,” or if the content of the speech is reasonably perceived to be inconsistent with the school mission, is openly lewd and lascivious, or promotes unlawful activity. Schools that allow for the organization of voluntary, noncurriculum student groups may not, however, prevent the organization of a specific group on the basis of religion. And student expression may not be prohibited if it is not disruptive or harmful. These decisions, as a whole, represent a fundamental premise that children, as compared to adults, are vulnerable and immature, requiring in loco parentis protection while under a public school’s care.

In none of these cases did the Supreme Court make an argument with regard to developmental science. The decision to restrict minors’ free speech rights was based on the court’s assessment of the unique mission of public schools, the perceived immaturity of school children, and the need to act in ways that promoted the socialization and positive development of children. Since school is compulsory, schools are expected to safeguard the students from harmful influences, including disruptive or harmful speech by other students. It is unclear how the court will respond to schools’ attempts to regulate students’ online behavior. Such cases have appeared in lower courts (*Doninger v. Niehoff*, 2008; *Kowalski v. Berkeley County Schools*, 2011; *Wisniewski v. Board of Education of Weedsport Central School District*, 2007) but, as of this writing, have not been considered by the Supreme Court.

### **Fourteenth Amendment Rights in Public Schools (Due Process)**

Just as the Supreme Court has attempted to balance free speech rights with the need to protect students from harmful or disruptive speech, the court has also weighed in on the balance between the need for effective discipline and the right to due process when accused of wrongdoing.

#### ***Goss v. Lopez (1975)***

*Goss v. Lopez* (1975) concerned a group of junior high and high school students in Ohio who were suspended from school for 10 days without a hearing. One student in particular, Dwight Lopez, was suspected of causing disruption and property damage in the school cafeteria but maintained that he was innocent. Lopez challenged the principal's decision to issue the suspensions without preliminary hearings, and, after appeals in lower courts, the case was ultimately heard in the U.S. Supreme Court.

The Supreme Court ruled that public school students who are accused of wrongdoing in school have a right to receive notice of their charges and to tell their side of the story prior to suspension. One of the issues involved in the court's decision-making process was the potentially damaging effect that severe school sanctions could have on sanctioned students' academic endeavors, psychological well-being, and reputations. The court limited the extent to which schools can act in loco parentis (as surrogate parent), noting that severe sanctions, in the absence of due process, can be harmful to the unjustly accused. This case also provided procedural safeguards for the First Amendment rights established in *Tinker v. Des Moines Independent Community School District* (1969) and it provided a vehicle by which Fourth and Eighth Amendment rights, discussed in the next and subsequent sections, could be applied to public school students.

### **Fourth Amendment Rights in Public Schools (Search and Seizure)**

The Fourth Amendment guarantees adults the right to be free from "unreasonable searches and seizures" by government agents and requires a warrant to be issued before a search is to be conducted. Of course there are exceptions to the warrant requirement (for example, when evidence or property is in plain view, when a person has been placed under arrest, and when current circumstances make obtaining a warrant impractical), however, to prevent unreasonable invasions of privacy, warrants are not to be

issued unless there is "probable cause," which is a relatively strict evidentiary standard. These protections are available for any location in which a person could have a "reasonable expectation of privacy" (*Katz v. United States*, 1967).

However, several Supreme Court cases have established that these Fourth Amendment protections are not automatically guaranteed to students in the public school system. In *New Jersey v. T.L.O.* (1985), *Safford Unified School District v. Redding* (2009), and *Mendoza v. Klein Independent School District* (2011), the Supreme Court held that warrantless searches of students in the public school system are permissible, though they should be justified and reasonable. Specifically, the court has held that school authorities are allowed to search students' persons and properties without probable cause (or warrants), including random drug testing for participants in extracurricular activities. These decisions attempt to balance the Court's primary concern for protecting the health and safety of students with the secondary concern for protecting students' rights.

#### ***New Jersey v. T.L.O. (1985)***

*New Jersey v. T.L.O.* (1985) was the first Supreme Court case to hold that the Fourth Amendment, to some extent, applies to students in the public school system. The case began when a teacher found T.L.O. (a 14-year-old high school freshman) and her friend smoking cigarettes in the school bathroom, in violation of school rules. Though T.L.O.'s companion admitted to smoking the cigarettes, T.L.O. denied the allegation and was escorted to the vice principal's office. After T.L.O. again denied smoking in the school lavatory, Vice Principal Theodore Choplick demanded T.L.O.'s purse and rummaged inside it. Choplick uncovered a package of cigarettes, which served as impetus to continue searching through the contents of the purse. After the vice principal found cigarette rolling paper, which he believed was indicative of marijuana use, he underwent a more exhaustive search of the purse. The extensive search revealed a small amount of marijuana, a pipe, empty plastic bags, approximately \$40 in small bills, a list of names of students who apparently owed T.L.O. money, and two letters suggesting that T.L.O. had sold drugs. The evidence and T.L.O., voluntarily driven by her mother, were taken to the police station, where T.L.O. confessed to selling marijuana at school. The state used the evidence and the confession to press delinquency charges and, ultimately, T.L.O. was ordered to serve 12 months on probation.

T.L.O. appealed, arguing that the search violated her Fourth Amendment rights. She sought to suppress the evidence, as well as the subsequent confession, under her



belief that the vice principal had no right to rummage through her purse. Though lower courts and the Appellate Division concluded that Vice Principal Choplick was justified in his decision to thoroughly search T.L.O.'s purse, the New Jersey Supreme Court determined that the vice principal had indeed violated the student's Fourth Amendment rights. The state of New Jersey appealed, arguing that the Fourth Amendment protections only apply to searches executed by law enforcement personnel, and the case was eventually heard in the United States Supreme Court.

The U.S. Supreme Court ruled that the Fourth Amendment applies to searches conducted by *state agents*, including public school officials, meaning that it is not permissible for school officials to conduct unjustified searches of students' property. Furthermore, the court acknowledged that T.L.O. had a reasonable expectation of privacy with respect to her purse. However, the Court determined that searches of public school students must be (a) "justified at inception" and (b) "reasonably related in scope to the circumstances which justified the interference in the first place." The court concluded that Vice Principal Choplick was justified in his decision to open the purse, given that T.L.O. had been caught smoking in the school lavatory, and that he was justified in his decision to continue the search of the purse, given that he had discovered drug paraphernalia—rolling paper—in the purse). In contrast to *probable cause*, the court asserted that the appropriate requirement for a school search was *reasonable suspicion*. The court justified the exemption from the *probable cause* and warrant requirements because of schools' inherent responsibility to prevent disruption, violence, and drug use, to respond immediately, and to maintain order. Interestingly, the Court did not give an opinion with regard to whether these same principles would apply to other types of student searches, such as a locker.

#### ***Vernonia School District 47J v. Acton (1995)***

The *Vernonia* case concerned whether a "suspicionless" drug-testing program for high school athletes violated students' Fourth Amendment rights. Vernonia School District believed that drugs were a growing concern in its schools and that student athletes were the leaders of the drug culture. The district responded to the drug problem by offering "special classes, speakers, and presentations designed to deter drug use. It even brought in a specially trained dog to detect drugs, but the drug problem persisted" (*Vernonia School District 47J v. Acton*, 1995, p. 649). Because of the failed attempts to curtail drug use, the district proposed the Student Athlete Drug Policy, a

program that introduced random drug testing to student athletes, which parents at the initial meeting unanimously approved. Under this new program, the student and his or her parents were required before each athletic season to sign a consent form that allowed the student athlete to be subjected to random urinalysis, in order to be eligible to participate in extracurricular sports. If a student failed a random test, the athlete's parents were notified and the student was given the choice of a suspension from athletics or a 6-week treatment program. A second failed drug test resulted in mandatory athletic suspension for the current season as well as the next season.

This particular case began when James Action was denied participation on a seventh-grade football team because his parents and he refused to sign the random-drug-testing consent form. His parents filed a suit and lower courts disagreed about whether suspicionless drug testing for student athletes violated the Fourth Amendment. However, the Supreme Court ruled that the school had the primary goals of protecting its students' health and safety and decreasing drug use. As such, like the prior cases *Bethel* and *Hazelwood*, the court confirmed its deference to schools' authority and upheld the Student Athlete Drug Policy, which required all high school student athletes to undergo random urinalysis. Indeed the most noteworthy contribution of this case was the court's decision to permit schools to conduct searches of students without *probable cause* or even *reasonable suspicion*. The court justified this decision based on the belief that "students within the school environment have a lesser expectation of privacy than members of the population generally" (cited in *Vernonia School District 47J v. Action*, 1995, p. 657; quote originally from *New Jersey v. T.L.O.*, 1985, p. 348) and on the observation that testing was required only as a condition for participation in a voluntary extracurricular activity.

#### ***Board of Education of Independent School District No. 92 of Pottawatomie County v. Earls (2002)***

Years after the case of *Vernonia*, the boundaries for suspicionless drug testing in public schools were expanded to include other extracurricular activities in addition to sports. In an extension of the standards set forth in *Vernonia School District 47J v. Action* (1995), the Supreme Court ruled that it is, in fact, constitutional to conduct mandatory drug tests for public school students involved in extracurricular activities (not just student athletes). As evident in these two cases, it was the court's belief that schools have a "responsibility for maintaining discipline, health, and safety," and as a result, students have "limited expectations

of privacy.” The court also agreed that schools and school districts had a strong interest in preventing drug use. Furthermore, the court determined, “Securing order in the school environment sometimes requires that students be subjected to greater controls than those appropriate for adults” (*Board of Education of Independent School District No. 92 of Pottawatomie County v. Earls*, 2002, p. 831). It is important to note that the Court only permitted the policies to affect students’ participation in *extracurricular* and *athletic* activities. Moreover, the policies were prohibited from having legal ramifications. Owing to the drug tests’ minimally intrusive nature and the limited purpose, the court justified the invasion of students’ privacy.

In contrast to the decision in *T.L.O.*, which required that authorities have reasonable suspicion before searching a student’s person or belongings, the *Vernonia* and *Earls* cases present a situation in which presumably innocent public school students are subjected to random, suspicionless tests of the content of their bodies, as a requirement for participation in voluntary school-related activities. These decisions emphasized the court’s primary concern for protecting the Nation’s youth health and safety, including the goal of preventing drug abuse.

#### ***Safford Unified School District v. Redding (2009)***

Savanna Redding was a 13-year-old middle school student who, based on an accusation from a classmate, was suspected to possess prescription strength drugs. The case originated when a fellow classmate and friend of Redding was found to be in possession of Redding’s day-planner. Various contraband, including knives and cigarettes, were found inside the day-planner. It was clear that the day-planner belonged to Redding and at no point did Redding deny ownership. The classmate also was in possession of four prescription-strength ibuprofen pills and one over-the-counter pill used for pain and inflammation (found in the classmate’s pocket)—which she claimed belonged to Redding.

Based on the classmate’s incriminating statement, Vice Principal Kerry Wilson searched Redding’s backpack (finding nothing) and sent to Redding to the nurse’s office for a thorough strip search. The school nurse, Peggy Schwallier, instructed Redding to remove her jacket, socks, shoes, T-shirt, and stretch pants, leaving her wearing nothing but her bra and underwear. Redding was then asked to pull her bra out and “shake it” and to “pull the elastic on her underpants, thus exposing her breasts and pelvic area to some degree” (*Safford Unified School District v. Redding*, 2009, p. 2638). However, the strip search yielded nothing.

Redding’s mother believed the search was unlawful and filed a suit against the Safford Unified School District, the vice principal, and the nurse. Trial and lower courts concluded that Redding’s Fourth Amendment rights were violated, however, after reconsideration, the Ninth Circuit reversed, and the case ultimately reached the U.S. Supreme Court.

The Supreme Court drew upon the standards established in *T.L.O.* and determined that the search was *reasonable at inception*. Specifically, the vice principal had reason to suspect the Redding may have had drugs in her possession, given the classmate’s accusation and given that Redding had been implicated in an alcohol-related incident at a school dance earlier in the school year. Therefore, a search of her backpack and outer clothing was warranted: “If a student is reasonably suspected of giving out contraband pills, she is reasonably suspected of carrying them on her person and in the carryall that has become an item of student uniform in most places today” (*Safford Unified School District v. Redding*, 2009, p. 2641). However, the court found that the intrusiveness of the strip search was not proportionate to the degree of suspicion. As Wilson never asked the peer *when* Redding gave her the pills or whether Redding currently had any drugs, the vice principal had no reason to believe that Redding currently had pills on her person. Furthermore, there was no reason to believe that Redding was hiding drugs in her bra or underwear, that the suspected painkillers posed imminent danger, or that she was distributing large quantities of drugs to fellow students—all of which may have justified an imminent, intrusive search of Redding’s person. As such, the court concluded that there was no justification for something as humiliating and psychologically damaging as a strip search.

Central in the court’s rhetoric was a discussion of the belief that adolescents are inherently self-conscious about their bodies and the potential long-term effects of the embarrassment and intrusiveness of a strip search. However, the Supreme Court did not believe that any previous case had clearly established the laws, standards, and limits for this type of search, and as a result, did not hold that the vice principal and nurse knowingly violated the student’s rights. Also, the court held that the motive behind the vice principal’s behavior was clear: to decrease illegal drug use and protect the students (underscoring the court’s belief that schools are responsible for protecting youth). However, the Supreme Court was clear in its decision that the strip search went too far and that Redding’s Fourth Amendment rights had indeed been violated, even if unintentionally. The most important implication of this case was that school authorities were not immune to the

regulations of the Fourth Amendment: Search and seizures of public school students must be proportionate to the available facts.

### ***Mendoza v. Klein Independent School District (2011)***

Another search that was reasonable at inception but went too far was central to the case of *Mendoza v. Klein Independent School District* (2011). In this case, Vice Principal Stephanie Langner believed that she had observed an eighth grade student, A.M., showing a group of fellow students something on A.M.'s mobile phone. When Langner approached the students, A.M. turned off the phone and placed it in her pocket. Upon questioning from Langner, A.M. denied using the phone during school hours (a school rule violation) and refused to give the phone to Langner. The vice principal continued to question A.M., and ultimately, A.M. surrendered the phone to Langner and returned to class.

Langner took the phone to her office and turned it on to see if A.M. had, in fact, been using the mobile device during school hours. She located the most recent message and found an outgoing message that had been sent during school hours. Langner then continued to scroll through the student's phone messages and discovered a nude picture of A.M. that the eighth grader had taken of herself. A.M. was called to the vice principal's office and the student admitted to sending the photo to a boy who had sent her a similar picture of himself. The student also confessed to forwarding the nude picture of the boy to another female student. Langner informed Principal Scott Crowe about the nude photo and the principal instructed Langner to call the police department. After the police investigation, Crowe informed Jennifer Mendoza, A.M.'s mother, that A.M. was being transferred to a Disciplinary Alternative Education Program (DAEP) for 30 days for "incorrigible behavior."

Mendoza, acting on behalf of her daughter, appealed the decision to the school board, but the Superintendent of School Administration upheld the punishment. After A.M. completed her time at DAEP, she returned to the middle school, but claimed that she had lost her position on the basketball team and that her reputation had been tainted. Mendoza filed a suit against the school district (for not "training" school administrators in regard to students' rights), the vice principal, and the principal on behalf of her daughter and herself (the subscriber of the cellular service).

The Texas Southern District Court determined that school personnel do not have a right to an "unfettered search" of students' cell phones without reasonable suspicion. The two-step criteria established in *T.L.O.* were used

to determine whether A.M.'s Fourth Amendment rights had been violated. The search was *justified at inception* as it was permissible for the vice principal to turn the phone on and check the date and time of the last message sent to determine whether the student had violated school rules against using the cellular phone during school hours. However, the *scope of the search was unreasonable*; it was a violation of the student's fourth amendment rights for the vice principal to continue to peruse the student's other text messages.

### ***Summary of Fourth Amendment Decisions***

Outside of school, adults and minors are equally free from unreasonable searches by government employees. At school, however, a student's privacy protections are much more limited. In contrast to the usual standard of *probable cause*, school authorities only need *reasonable suspicion* to conduct a search of a student's person or belongings. Perhaps most striking with respect to students' Fourth Amendment rights is the Court's support for schools' suspicionless drug testing for students who participate in extracurricular activities. The court has upheld a student's privacy rights when it believes the school has gone too far: for example, when the scope of the search is not proportionate to the degree of suspicion or the availability of conclusive evidence.

### ***Eighth Amendment Rights in Public Schools (Corporal Punishment)***

There are approximately 113 countries that ban corporal punishment in schools, however the United States is not one of them. Nineteen U.S. states permitted the use of corporal punishment in public schools in the 2005–2006 school year.<sup>1</sup> In fact, in 2006, there were 223,190 students who were physically disciplined in a U.S. public school, with 40% of cases occurring in Texas and Mississippi. In *Ingraham v. Wright* (1977), the Supreme Court considered whether corporal punishment in schools should be held to the Eighth Amendment standards of Cruel and Unusual punishment and also whether the due process clause of the Fourteenth Amendment applied.

### ***Ingraham v. Wright (1977)***

In *Ingraham v. Wright* (1977), a 14-year-old junior high school student, James Ingraham, disobeyed a teacher's request to exit the stage of a school auditorium. As a result, the teacher brought the defiant student to Principal Willie

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<sup>1</sup>United States Department of Education, Office for Civil Rights.

Wright's office, where the principal used a wooden paddle to hit the student's buttocks more than 20 times. Because Ingraham resisted the paddling, the principal asked the vice principal and an assistant to restrain the student's legs and arms. Ingraham suffered extensive bruising and was required by doctors to stay home from school for 11 days.

Ingraham's parents believed the paddling was *cruel and unusual punishment* and sued for damages. The court held that the Cruel and Unusual Punishments Clause of the Eighth Amendment was designed to be used for individuals charged with and convicted of crimes, not schoolchildren in the public school system: "We adhere to this long-standing limitation and hold that the Eighth Amendment does not apply to the paddling of children as a means of maintaining discipline in public schools" (*Ingraham v. Wright*, 1977, p. 664). The court did not excuse or condone the practice of physical punishment in school, but held that corporal punishment is not a constitutional issue, and that parents remain free to press criminal charges in such cases. The court also discussed whether the due process clause of the Fourteenth Amendment (requiring prior notice and a hearing) was applicable. Ultimately, the court held that requiring the procedural safeguards established in the due process clause of the Fourteenth Amendment (which had already been established as applicable to cases involving suspension from school in *Goss v. Lopez*, 1975) would present an unduly complicated and potentially resource-heavy requirement for schools and school districts. Furthermore, the court reasoned that there are some situations that may require immediate punishment and that students are protected because schools are monitored by the members of the surrounding communities. Given these facts, the court ultimately determined that the costs associated with procedural safeguards outweighed the potential benefits to the students. As was the decision in First Amendment cases the court had heard previously (*Bethel* and *Hazelwood*) this decision once again demonstrated the court's deference to schools and the belief that teachers and principals (as opposed to federal judges) should be responsible for controlling student behavior.

### **Zero-Tolerance Policies and the School-to-Prison Pipeline**

Zero-tolerance policies were originally intended to send unequivocal messages that violence and drug use, in any amount, will not be tolerated on school property. These policies first appeared in 1989 and initially required schools to expel students suspected to be involved with on-campus

drug use (or possession), violence, or gang-related activity (Skiba & Knesting, 2001). Over the years, the policies have expanded, and now include behaviors such as smoking and other forms of school misconduct. In 1994, the Clinton administration passed the Gun-Free Schools Act, which mandates expulsion as well as law enforcement referral for any student who possesses a firearm on school property. Though the act was originally intended to apply only to firearms, recent changes now permit the possession of other weapons to be subject to the same sanctions (Skiba & Knesting, 2001). One consequence of this "get tough" approach is that schoolchildren who violate certain school rules end up with an arrest record (Casella, 2003). This is what some researchers have termed the *school-to-prison pipeline* (American Psychological Association Zero Tolerance Task Force, 2008; Wald & Losen, 2003).

Research has consistently shown that these policies are not effective deterrents for the targeted behaviors, and that African American youth are more likely than other youth to receive punitive sanctions under these policies (American Psychological Association Zero Tolerance Task Force, 2008; Skiba & Knesting, 2001). A zero-tolerance case has not yet been heard in the Supreme Court, but given the potential for zero-tolerance policies to circumvent typical due process mechanisms for disciplinary proceedings within the school, and given their inherently disproportionate response to infractions of varying severity, their validity could be subject to challenge.

### **Summary of Legal Regulation of Children at School**

Schools are tasked with educating, socializing, and protecting future generations of adult citizens. In pursuit of maintaining an orderly educational environment, the court has given schools the authority to monitor and regulate its students. The Supreme Court has held that public school students are not guaranteed adult-like standards of First, Fourth, Eighth, or Fourteenth Amendment rights. However, the Supreme Court does provide limited protections to students. Free speech rights are protected if the speech is not disruptive or harmful. Searches that violate reasonable expectations of privacy must be based on a standard of reasonable suspicion, and must be proportionate to the perceived threat to student safety. Eighth Amendment prohibitions against cruel and unusual punishment do not apply to school officials, though excessive abuse would still be subject to criminal charges. Rights to due process apply in some cases, such as suspension, but not in others, such as physical beatings, the regulation of which would



be prohibitively complicated, and which apparently would be less effective if not performed immediately, while the principal is still angry.

Nowhere in any of these cases does developmental science come into play, other than in rudimentary observations that humiliating strip searches are bad for self-esteem, especially, perhaps, among adolescent girls. The emphasis of every relevant case has been on the protection of vulnerable children (whether from their classmates, or from overreaching authority figures), which has little to do with the changes in capabilities and competencies that occur during childhood and adolescence. A consideration of such changes would not affect the rationales presented for the various rights in question, as they apply to students in public school, regardless of maturity level.

## CHILDREN AND ADOLESCENTS IN THE JUSTICE SYSTEM

As is the case with respect to other aspects of the law, two themes dominate debates about the treatment of children and youth within the juvenile and criminal justice systems. The first is whether children and adolescents have the same rights in court as adults do. Because minors' offenses are sometimes adjudicated in juvenile court and sometimes adjudicated in criminal court, the question concerning the rights of children and adolescents in the context of the justice system is more accurately rephrased as whether the rights that are protected in criminal court are also protected in juvenile court; in criminal court, juveniles have the same rights as adults, although there are some specific instances in which they cannot face the same sanctions if found guilty. In the United States, these rights include the protection against self-incrimination guaranteed by the Fifth Amendment, as well as those that are protected under the Sixth Amendment, such as the right to counsel, the right to confront witnesses, the right to a jury trial. As we shall see, some of these protections have been extended to juvenile court, but others have not.

The second theme concerns developmental differences between minors and adults, a theme that touches on many different issues, including the criteria used to determine whether a minor's offense is adjudicated in juvenile or criminal court; whether minors are competent to stand trial in criminal court; whether minors should be held to the same standards of criminal responsibility as adults (and if so, exposed to the same punishments if convicted); and whether minors should be afforded special protections when

questioned by law enforcement officers. The central issue in each of these discussions is whether minors and adults differ in their cognitive abilities and psychosocial capacities that are relevant to legal decisions and, if so, where a sensible boundary should be drawn between individuals who are deemed immature and those who are viewed as comparable in maturity to adults. Developmental science has played a role in informing the discussion of all of these issues.

No consideration of children and adolescents in the justice system can take place without locating the discussion in a cultural and historical context. Today, the United States stands apart from most of the industrialized world in its willingness to consider juvenile offenders as adults for purposes of adjudication and sanctioning. In most other countries, Age 18 is a bright-line boundary between minors and adults for purposes of criminal law, as it had been in the United States for most of the 20th century. During the last decades of the 20th century, however, a spate of "get-tough" policies grew in popularity; among the outcomes of this change in attitude is that, in the United States, many more individuals under the age of 18 are now tried as adults, outside the juvenile justice system.

We note this because many of the issues discussed in this section of the chapter, such as whether adolescents should be held to the same standards of criminal culpability as adults, or whether minors are competent to stand trial in adult court, would not have been topics of discussion in a *Handbook* chapter on children and the law as recently as 25 years ago. In some regards, then, the importance of developmental science for discussions of children and youth in the justice system is a recent development that has been necessitated by relatively new changes in policy and practice that have blurred what formerly had been clear distinctions between adolescents and adults who come into contact with the justice system. While some of these issues are also important in other countries, they affect far more individuals in the United States than abroad. For this reason, it is important to have some familiarity with the American juvenile justice system.

## A Brief History of American Juvenile Justice

Two perspectives capture the extremes of the pendulum swings that have characterized American juvenile justice policy since the beginning of the 20th century:

Why is it not just and proper to treat these juvenile offenders, as we deal with the neglected children, as a wise and merciful father handles his own child whose errors are not discovered by the authorities? (Mack, 1909, p. 7)

Juvenile offenders are criminals who happen to be young, not children who happen to be criminal. (Regnery, 1985, p. 65)

The guiding premise behind the creation of a separate system of justice for children and youth was that juveniles are different from adults in ways that should affect the way we judge and sanction them. Ben Lindsey, founder and judge of the Denver Juvenile Court in the early 20th century, for example, believed that there were “no bad kids”—only bad conditions that led to bad conduct. The purpose of his court, as he explained in a magazine article in 1927, was to save the young people who came before his bench, not to punish them.

Indeed, still today an entirely different lexicon characterizes juvenile court proceedings than those that take place in criminal court. Juveniles commit “offenses,” not crimes; they are “adjudicated delinquent” at the conclusion of a “proceeding,” rather than found guilty at the end of a trial; and they receive “dispositions” instead of sentences. In practice, juvenile and criminal court proceedings share many commonalities, but the vocabulary of juvenile court serves as a reminder that the court was founded with rehabilitative goals in mind. Because the states’ primary purpose was to rehabilitate delinquents, the reformers were emphatic that concepts such as criminal responsibility and punishment had no place in the vocabulary of juvenile justice. As Judge Lindsey declared, “Our criminal laws are as inapplicable to children as they would be to idiots” (Lindsey & O’Higgins, 1910, p. 133).

Lindsey embodied the ideals of the Progressive Era and, like the other social reformers who worked to establish the juvenile court at the turn of the 20th century, he viewed youth involved in crime first and foremost as children. He often emphasized that his court was *not* a criminal court, and that the lawbreakers who came before him were not criminals. His only goal was to provide aid and rehabilitation, which he accomplished with the help of probation officers, social workers, physicians, and psychiatrists. Judge Lindsey’s court exemplified the rehabilitative model that dominated juvenile justice policy for much of the 20th century, a model under which delinquents were dealt with as children whose welfare was of primary concern when the state intervened in response to their criminal conduct.

Prior to the establishment of the juvenile court in the United States, only young children were insulated from criminal responsibility, reflecting the presumption under English common law that individuals under the age of 7 were incapable of committing a crime, owing to their limited capacity to appreciate the wrongfulness of their

acts (known as the *infancy defense*). Under common law, children between 7 and 14 were also presumed incapable of committing crimes, but this presumption was rebuttable, and most youth of this age who committed crimes actually were tried and punished as adults. Young people older than 14 were viewed as having the same capacities as adults. This all changed with the founding of the juvenile court, which in most locales was charged with responding to offenses committed by individuals under 18.<sup>2</sup>

For much of the 20th century, the rehabilitative model shaped the operation of the juvenile court. The goal of treatment influenced the process by which delinquency was adjudicated, the type of dispositions imposed (at least in theory), and the roles of the various participants. Delinquency dispositions were open-ended and indeterminate—which made sense, given their purported rehabilitative purpose. Like treatment for an illness, rehabilitation, in theory at least, should end when the youth was “cured.” Under the rehabilitative model, the duration bore no necessary relation to the seriousness of the offense; thus, the principle of *penal proportionality* (i.e., that the degree an individual is punished for a criminal act should be in proportion to his or her responsibility for it), like criminal responsibility, had no place in delinquency proceedings. Although in practice, the seriousness of the crime usually played a role in the type and duration of dispositions, juvenile court judges were relatively free to order dispositions based on their judgment about the youth’s “needs,” without regard to the seriousness of his criminal conduct.

### *Gault and Its Repercussions*

Despite its initial success, the traditional juvenile court and the rehabilitative model on which it was built were largely a failure. By the 1960s the rehabilitative model began to crumble, and since that time, the juvenile court has been challenged from both the left and the right. The first successful assault was launched by youth advocates who claimed that adolescents charged with crimes were getting a bad deal in a system that was ostensibly designed to serve their needs. These critics argued that the juvenile system failed to provide treatment, but that it maintained the myth that rehabilitation was its purpose as the justification for denying juveniles the procedural rights given to adult criminal defendants. Juveniles had no right to legal counsel, and delinquency proceedings lacked the careful fact-finding of

<sup>2</sup>Today, 18 remains the jurisdictional dividing line between juvenile and criminal courts in most states, although some use 17 or, less commonly, 16.

an adversarial criminal trial; yet, dispositions, at least for some youth, meant confinement in correctional facilities that, from the incarcerated youth's perspective, may have been hard to distinguish from prison. This push for reform ultimately led the U.S. Supreme Court, in the landmark 1967 opinion of *In re Gault*, to extend due process protections to youth in delinquency proceedings. Along with *Roper v. Simmons*, the 2005 Supreme Court case that abolished the juvenile death penalty (discussed later in this chapter), *Gault* is the most important case in the history of American juvenile justice jurisprudence.

Gerald Gault, Age 15, was arrested for making telephone calls to his next-door neighbor that the Supreme Court later described as being "of the irritatingly offensive, adolescent, sex variety." He was brought before a juvenile court judge, but he was not given notice of the charges against him and did not have an attorney to represent him. The neighbor never appeared in court as a witness; instead, the arresting officer testified, describing what the neighbor reported. The juvenile court judge committed Gerald to the Arizona State Industrial School for up to 6 years, for a crime that would have carried at most a sentence of 2 months in jail and a \$50 fine if committed by an adult. These facts made *Gault* the perfect case to challenge the informality of the process by which guilt was determined in juvenile delinquency proceedings, an approach that was justified by the ostensibly rehabilitative purpose of the proceedings.

Gerald Gault appealed and ultimately prevailed in the Supreme Court. The court flatly rejected the state's justification for the informality of delinquency proceedings. Justice Abe Fortas, who wrote the majority opinion, described the proceeding as a "kangaroo court," noting that delinquents generally got little rehabilitation, and what they received was ineffective, as evidenced by the high recidivism rate in juvenile crime. The court concluded that youth facing adjudication in delinquency proceedings, like adult criminal defendants, faced a loss of liberty and thus were entitled to certain due process protections as mandated by the U.S. Constitution. Juveniles, like adults, had a right to notice of the charges, a right to confront witnesses against them, a privilege against self-incrimination, and, most importantly, a right to counsel. The procedural changes ordered by the court transformed delinquency proceedings into more formal adversarial hearings—unlike criminal trials.

Although *Gault* is considered the landmark case concerning due process protections in juvenile court, it actually cemented a line of reasoning about juveniles' rights which

had been first expressed 1 year earlier, in *Kent v. United States* (1966), a lesser-known case concerning the process through which a juvenile court decides whether to waive its jurisdiction and transfer a juvenile's case to criminal court, where the individual would be prosecuted as an adult. The court ruled in *Kent* that juveniles are entitled to a hearing before their case was waived to criminal court, that their attorneys are entitled to have access to the records used in making the waiver decision, and that the judge had to provide the reasons for the decision to transfer. In some regards, *Kent* is an important case not so much for its relevance to juveniles' rights (as is *Gault*), but because one of the suggested reasons for transfer to adult court that were listed in the statute that the court reviewed in this case (these reasons are referred to as the "*Kent* criteria") was "the sophistication and maturity of the juvenile." Importantly, however, considering the maturity of the offender is only a suggestion, not a requirement. As this chapter explains, discussions of whether psychological maturity matters for judgments of criminal culpability, or whether juveniles are as "mature" as adults in ways that are legally relevant, would come to be central issues in the Supreme Court's juvenile justice jurisprudence some 40 years later.

Several Supreme Court cases subsequent to *Gault* considered the constitutionality of other procedural differences that existed between juvenile and criminal court. The two most important of these are *In re Winship*, a 1970 case in which the court ruled that juvenile courts needed to follow the same evidentiary standards as criminal courts, namely, proof "beyond a reasonable doubt" (prior to *Winship*, the standard for a finding of delinquency in juvenile court was merely "a preponderance of the evidence," consistent with the view that delinquency adjudications were civil, rather than criminal, proceedings); and *McKeiver v. Pennsylvania*, a 1971 case in which the court found that individuals whose cases were heard in juvenile court did not have the right to a jury. Thus, whereas *Winship* made juvenile and criminal court proceedings more similar, *McKeiver* maintained one of their important differences. The court's majority argued, among other things, that the introduction of a jury to a delinquency procedure would make it too adversarial, and that extending all the protections of criminal court to juvenile court would ultimately eliminate the need for a separate juvenile court. In the years following *Winship* and *McKeiver*, the court continued to clarify the boundaries between juvenile and criminal court proceedings, sometimes ruling that juveniles had the same rights and protections as adults, but sometimes ruling that they did not. A passage from the

*Gault* decision sums it up best: “We do not mean . . . to indicate that the [juvenile court] hearing to be held must conform with all the requirements of a criminal trial . . . but we do hold that the hearing must measure up to the essentials of due process and fair treatment” (*In re Gault*, 1967, p. 30).

Although *Gault* gave lip service to rehabilitation as a laudable if unrealized goal of juvenile dispositions, the rehabilitative model was in disrepute, and by the 1970s it had pretty much collapsed. Violent juvenile crime rates started to climb in the late 1980s, triggering a new wave of reforms under which young criminals increasingly were either classified as adults or punished severely within the juvenile system. By the end of the 20th century, the rhetoric surrounding the treatment of children and adolescents who violate the law, at least in the United States, could not have been more different from that espoused by the founders of the juvenile court.

### ***Trying Juveniles as Adults***

In the latter decades of the 20th century, as violent youth crime rates rose, attacks on the juvenile court intensified. Critics railed at the depiction of young criminals as children, a characterization that was discordant with media images of teenage street gangs spreading fear in urban neighborhoods. By the 1990s young offenders became “super-predators” in the popular imagination, teenage criminals without moral inhibitions who were eager to kill and maim those who came in their paths. Under the mantra of “adult time for adult crime,” young offenders became subject to increasingly harsh punishments, many of them administered by adult criminal courts and sometimes carried out within correctional facilities that had been previously reserved for individuals 18 and older.

The modern reformers pursued their goal of reclassifying young offenders as adults through several legislative strategies. First, the age of judicial transfer was lowered in many states and revised in other ways to facilitate criminal prosecutions of juveniles. In a transfer hearing of the sort mandated by the *Kent* decision, a juvenile court judge makes an individualized determination of whether the young defendant should be deemed a legal adult for purposes of criminal prosecution or adjudicated as a child in juvenile court. Under the traditional system, *judicial transfer* functioned as a mechanism to exclude from the court’s jurisdiction the occasional older youth charged with a serious violent crime (usually murder) who the judge determined was not amenable to treatment as a juvenile. Today, in a majority of states, 10-year-olds charged with murder can be transferred to criminal court, and although

almost all statutes that do set a minimum age for criminal court prosecution designate Age 14 or younger, a large minority of states have no statutory minimum age of transfer. The transfer decision under many statutes need not incorporate consideration of maturity or lack of amenability to treatment; it is often based, instead, on the seriousness of the offense and the juvenile’s criminal record.

Other legislative reforms enacted during the last decades of the 20th century gave criminal courts automatic jurisdiction over certain youth (that is, without a judicial hearing on whether the juvenile’s case should be transferred to the adult system). Under some *automatic waiver* statutes, young offenders charged with designated serious crimes are defined categorically as adults, and are excluded from juvenile court jurisdiction based on their age and the offense with which they are charged. In a few states, the general age of criminal court jurisdiction is Age 16 or 17; in these states all juveniles of the jurisdictional age or older are deemed adults for purposes of criminal prosecution, even though they typically are legal minors for most other purposes, such as voting or purchasing alcohol. Under other waiver statutes, the state leaves the choice of court venue up to the prosecutor, who can decide whether to file the charges against the youth in either juvenile or criminal court, a policy referred to as *prosecutorial discretion*. Legislative waiver statutes shift discretion from judges, who are often deemed soft on crime, to prosecutors and legislators (who are not assumed to have this deficiency).

Each year in the United States, whether through automatic waiver, prosecutorial discretion, or judicial transfer, more than 200,000 individuals below the age of 18 are tried as adults. Most of these cases involve juveniles who live in states where the jurisdictional boundary between juvenile and criminal court is set at an age lower than 18, but even in states where 18 is still the dividing line, a substantial number of young people are prosecuted in adult court as a consequence of statutes that mandate the exclusion of certain crimes from the juvenile court if the accused individual is of a certain age or that permit prosecutors to file their charges in criminal court. As judicial discretion has been increasingly constrained by these statutes, judicial waiver has become extremely rare.

Until recently, only the most violent crimes (usually murder, rape, armed robbery, aggravated assault, and kidnapping) could be the basis of criminal court prosecution of juveniles in most jurisdictions, but many statutes today include a long laundry list of transferable offenses subject to automatic waiver or prosecutorial discretion. Indeed, in most states today, youth charged with drug and property



offenses can be tried and punished as adults. Some states have extended juvenile court jurisdiction into adulthood or adopted *blended sentencing* statutes, under which juveniles who are convicted of designated felonies are subject to stiff sentences in juvenile court that are completed by transfer to adult prison when the offenders become adults. Most blended sentencing statutes include either a procedure when the offender reaches the age of 18 for determining if the adult portion of the sentence will be carried out, or a provision suspending that portion of the sentence for youth who have not violated institutional regulations or probation conditions. However, in many states, juveniles can be sentenced to very long sentences, including life without the possibility of parole for juveniles convicted of homicide.

### Developmental Concerns: Culpability and Competence

The increase in the number of juveniles tried as adults (or eligible to be tried as adults) has raised two broad categories of questions about developmental differences between adolescents and adults. One set of questions concerns juveniles' *adjudicative and procedural competence*, a phrase that refers to their competence to stand trial in adult court and to make legal decisions about such matters as whether to submit to an interrogation by a law enforcement agent, testify in their own defense, or accept the terms of a plea agreement. A second set of questions concerns juveniles' *criminal culpability*, which refers to the extent to which juveniles should be held to the same standards of criminal responsibility as adults. Although both sets of questions concern differences between adolescents and adults with respect to their psychological abilities and capacities, discussions of juveniles' competence and culpability are not the same. Questions about adjudicative and procedural competence ask whether adolescents and adults differ in the abilities necessary to make an informed decision and, if so, whether these differences warrant providing juveniles with added or special protections; in this sense, questions about adjudicate competence share much in common with questions about other aspects of juveniles' competence, such as their competence to consent to a medical procedure or provide informed consent in a research setting. In contrast, questions about adolescents' criminal culpability pertain to the extent to which juveniles are responsible for their behavior, and, in light of the principle of penal proportionality discussed earlier, the extent to which they should be punished for their bad deeds.

In other words, questions about culpability concern the juvenile's mental state at the time of an offense, whereas

questions about competence concern the juvenile's ability to make legal decisions after an offense (or an alleged offense) has occurred. Some psychological capacities are relevant to both competence and culpability, but others are not. For instance, the ability to foresee the future consequences of one's actions might influence an adolescent's decision to participate in an activity that might endanger another person (and is therefore relevant to judgments about the juvenile's culpability for any harm that may have occurred as a result) and it might also influence how a juvenile responds to a police interrogation (and is therefore relevant to decisions about whether a juvenile who decided to confess to a crime was competent to understand the ramifications of this decision). On the other hand, whether a juvenile defendant who has committed a crime understands the difference between the goals of a prosecutor and a judge is relevant to his or her competence to stand trial, but has nothing to do with the adolescent's responsibility for the offense. It is possible, therefore, for an adolescent to be fully responsible for a criminal act but incompetent to serve as a defendant in a criminal proceeding or less than fully responsible for a criminal act but perfectly competent to stand trial.

### Adjudicative and Procedural Competence

It is well established that a criminal proceeding meets the constitutional requirements of due process only when the defendant is competent to stand trial, which includes capacities to assist counsel and to understand the nature of the proceeding sufficiently to participate in it and make decisions about rights afforded all defendants (*Dusky v. U.S.*, 1960; *Godinez v. Moran*, 1993). Although the conventional standard for competence to stand trial focuses on mental illness and disability, there has been growing recognition that some youth without mental illness or disability may nevertheless be incompetent due to developmental immaturity (Grisso et al., 2003).

Past analyses of the legal concept of competence have outlined the specific functional abilities about which the law is concerned in competence cases (Grisso, 2002), which are often referred to as the "*Dusky* criteria." These abilities include a basic comprehension of the purpose and nature of the trial process, the capacity to provide relevant information to counsel, the ability to reason about this information in a logical fashion, and the ability to apply information to one's own situation in a manner that is neither distorted nor irrational. In addition to defendants' basic understanding and reasoning abilities, their "decisional competence" may be significant in cases in

which defendants must make important decisions about the waiver of constitutional rights (Bonnie, 1992, 1993). Adolescents' competence to stand trial is clearly important in discussions of whether and under what circumstances juveniles might be tried as adults (since the *Dusky* criteria apply to all criminal defendants, regardless of age), but they are also important in considerations involving juvenile court proceedings in light of post-*Gault* decisions that over time have created a relatively more adversarial climate within the juvenile justice system. There is still disagreement about whether the specific competence standards in juvenile court should be identical to or less stringent than those in criminal court (Redding & Frost, 2002), but the majority of states have agreed that, given the potentially serious outcomes of a delinquency adjudication (including, perhaps, a long period of confinement in a prison-like facility), some minimum standard of competence should apply to juvenile court proceedings.

Two obvious ways in which adolescents and adults differ that might make them differentially competent are in their basic cognitive abilities (e.g., ability to recall key bits of information) and life experiences (e.g., familiarity with the roles of the various participants in a trial). A less frequently considered but potentially important difference between adolescents and adults involves aspects of psychosocial maturation that include progress toward greater future orientation, better risk perception, and less susceptibility to peer influence (Coffman & Steinberg, 2000; Scott, Reppucci, & Woolard, 1995). Several authors have hypothesized that these developmental factors could result in differences between adolescents' and adults' decision making about important rights in the adjudicative process, including whether to submit to an interrogation (and, if so, how to respond to questions); whether to provide information to one's defense counsel (and, if so, how completely and honestly to disclose important facts); whether to testify in one's defense; and whether to accept a plea agreement (Grisso et al., 2003). Although it might be assumed that adolescents who are less than fully competent can rely on the advice of adults when making these decisions, adults are not always present (e.g., when an adolescent is picked up for questioning), are not always wise about legal matters (i.e., not all adults are competent), and do not always have the same interests as those of the adolescent (e.g., a mother who is angry at her adolescent for having gotten into trouble with the law in the past may encourage the juvenile to confess to a crime that he may not have committed).

Several studies of age differences in various capacities relevant to adjudicative and procedural competence have

been conducted (for a review see Grisso, 2005). In general, these studies indicate that individuals 15 and younger may be less likely than those 16 and older to possess the skills and capacities likely to render them competent to stand trial or to make important legal decisions, including decisions that arise during interrogations (e.g., whether to waive one's Miranda rights) and trial proceedings (e.g., whether to waive one's right to a jury trial or to accept a proffered plea agreement). As several of the present authors have pointed out in other publications (e.g., Steinberg, Cauffman, et al., 2009), these age differences in various aspects of adjudicative and procedural competence parallel age differences in other domains of competence (e.g., granting informed consent) as well as age differences in basic information-processing and logical reasoning abilities. Although studies of psychosocial development indicate continued maturation in capacities such as impulse control (Steinberg et al., 2008), risk aversion (Steinberg, 2009a), resistance to peer pressure (Steinberg & Monahan, 2007), sensitivity to costs as well as rewards (Cauffman et al., 2010), and future orientation (Steinberg, Graham, et al., 2009) beyond mid-adolescence, age differences in these capacities may not result in age differences in competence to stand trial, perhaps because these social and emotional deficiencies are less likely to impair adolescents' judgment under the particular conditions in which legal decisions are made. As we have argued elsewhere, these capacities may be relevant to assessments of criminal responsibility, however (see Steinberg, Cauffman, et al., 2009).

As noted above, competence to stand trial is only one aspect of legal competence, which also includes the competence to make legal decisions outside the courtroom. The most frequently studied aspect of noncourtroom legal decision making concerns adolescents' responses to interrogations by law enforcement officials (Kassin et al., 2010). Within this area of inquiry, researchers have studied age differences in individuals' comprehension of Miranda warnings (Grisso, 1980), in individuals' decisions about whether to confess to a crime they have committed, (Grisso et al., 2003), and in individuals' susceptibility to making false confessions (Kassin, 2008; Malloy, Shulman, & Cauffman, 2013). Generally speaking, these studies show that adolescents, especially those younger than 16, are less likely to understand their rights, more likely to comply with authority, and less likely to make decisions that reflect their best interests (e.g., remaining silent rather than confessing during an interrogation, giving a false confession in order to please an interrogator). Results of these studies have prompted many advocates to call for

greater protections for juveniles during interrogations, including mandatory videotaping and/or the presence of an adult during questioning (Kassin et al., 2010).

Under American criminal law, police officers are only required to notify those being interrogated of their legal rights, including the right to remain silent, if the individual to be questioned is in custody; this notification, which is well-known to anyone who has watched a television program or film involving a police interrogation, is known as the Miranda warning. Statements made to an officer while one is in the officer's custody are inadmissible in court unless the individual has been "Mirandized." In contrast, if an individual is not in custody, no Miranda warning is required, and anything said to a police officer subsequently can be used in a legal proceeding. One aspect of decisional competence that has received special attention from the courts, therefore, concerns individuals' appraisal of whether they are in custody, because an officer may argue that a confession obtained from an individual who was not in custody was given freely and voluntarily, even though the individual had not been informed of his or her rights.

This issue was at the center of *J.D.B. v. North Carolina*, a 2011 U.S. Supreme Court case involving a 13-year-old adolescent who was pulled out of a social studies class and interrogated by two police officers in a middle school conference room, in the presence of two school administrators. The boy was suspected of having committed two home break-ins during which several items were stolen. Although he initially denied having stolen the property, after some questioning by one of the police investigators and the urging of a school administrator to "do the right thing," J.D.B. eventually admitted that he and a friend had indeed committed the robberies. The boy had not been read his Miranda warning, however, nor was he told until after he confessed that he was free to leave the conference room. Neither the officers nor the administrators provided an opportunity for the boy to speak with his grandmother before he was questioned.

At issue was whether J.D.B.'s confession was admissible. The boy's defense attorney moved that the results of the interrogation should be suppressed, on the grounds that the confession was involuntary because it was conducted in a custodial setting in which the police officers failed to notify J.D.B. of his rights. The trial court denied the motion, arguing that J.D.B. was not in custody and that his confession was therefore voluntary. Both the appellate court and the state supreme court concurred with the trial court.

The U.S. Supreme Court disagreed. In prior cases, the court had determined that in deciding whether issuing a Miranda warning is necessary, a police officer is required to take into account all of the "circumstances surrounding the interrogation" (*Stansbury v. California*, 1994, at 322), including any circumstance that "would have affected how a reasonable person" in the suspect's position "would perceive his or her freedom to leave" (*Stansbury*, 1994, at 325). In *J.D.B.* the court ruled that the officer must take into account the age of the individual being questioned: "A reasonable child subjected to police questioning will sometimes feel pressured to submit when a reasonable adult would feel free to go" (*J.D.B. v. North Carolina*, 2011, p. 8). Importantly, the court noted that the relevant variable is the age of the interrogatee, and not the officer's judgment of that person's appraisal of the situation, a criterion that had been judged inappropriate in a previous case (*Yarborough v. Alvarado*, 2004). "A child's age is far more than a chronological fact," the majority opinion noted in *J.D.B.* "It is a fact that... generates commonsense conclusions about behavior and perception. . . . Such conclusions apply broadly to children as a class. And, they are self-evident to anyone who was a child once himself, including any police officer or judge" (*J.D.B. v. North Carolina*, 2011, pp. 8–9).

### *Criminal Culpability*

The recognition that juveniles and adults are different in ways that necessitate their differential treatment under criminal law had arisen in several Supreme Court cases that preceded *J.D.B.*, but in a different context. In these earlier cases, all but one of which concerned the death penalty, the central matter concerned whether juveniles should be held to the same standards of criminal responsibility as adults and, accordingly, subject to the same punishments for comparably serious crimes. At issue in these cases has been whether a punishment that is constitutional when applied to adults violates the Eighth Amendment's prohibition against "cruel and unusual punishment." These cases revolved both around whether a specific punishment was "unusual" when applied to a juvenile (e.g., if only a very small minority of states allowed the death penalty in cases involving minors, a state's law permitting capital punishment in these instances might be viewed as "unusual") as well as whether the punishment was "cruel," in the sense that it was disproportionate to the degree of responsibility the offender had for the criminal act. Our discussion focuses on the latter question, since the former

one is mainly an actuarial one that has nothing to do with developmental differences between adolescents and adults.

The landmark case in this series was *Roper v. Simmons*, which abolished the juvenile death penalty in 2005. *Roper* had been preceded by two earlier cases, *Thompson v. Oklahoma* (1988), which banned capital punishment for individuals under the age of 16, and *Stanford v. Kentucky* (1989), which affirmed 16 as an acceptable minimum age for eligibility for capital punishment, mainly on the grounds that there existed no national consensus against this policy. *Roper* moved this line to 18, in part because by 2004 (when the case was argued) the national consensus had changed, and in part because of increasing scientific evidence that important capacities relevant to judgments of culpability continued to mature beyond age 16.

*Thompson* was not the first case in which the court acknowledged that juveniles are less mature than adults. The court's opinion in *Thompson* built on prior cases, most notably, *Eddings v. Oklahoma* (1982), a death penalty case in which the court, while not banning the juvenile death penalty outright, opined that the age of a criminal defendant should be taken into account as a potential mitigating factor during sentencing, and *Bellotti v. Baird*, a case concerning minors' access to abortion without parental consent, in which the court explicitly recognized the developmental immaturity of juveniles, and, in particular, "their inability to make critical decisions in an informed, mature manner" (*Bellotti v. Baird*, 1979, p. 2). Thus, although *Roper* abolished the juvenile death penalty, the court had already recognized that there were important developmental differences between adolescents and adults and, in particular, that adolescents were immature in ways that mitigated their criminal responsibility.

The majority opinion looked to developmental psychology for support. Writing for the majority, Justice Anthony Kennedy pointed to three differences between adolescents and adults that made it difficult to classify juveniles "among the worst of offenders": (1) their immaturity and an underdeveloped sense of responsibility, which compromised their decision-making ability (noting that this was the very reason that states limited many juveniles' rights); (2) their heightened susceptibility to external influence, including peer pressure, which gave them less control over their environment; and (3) their still-developing character. The first two differences make adolescents less responsible for their behavior than adults, and, accordingly, less culpable for their crimes. The third difference makes

adolescents better candidates for rehabilitation. Kennedy also noted that the same characteristics that make juveniles less culpable also make them less likely to be deterred by the possibility of capital punishment, thereby undercutting one of the chief claims of death penalty proponents (that it serves a deterrent purpose).

The dissenting justices in *Roper* questioned the need for a categorical exclusion of adolescents from death penalty eligibility, as opposed to case-by-case sentencing decisions that could be made by judges or juries. In some regards, this was the central and most challenging issue in *Roper*. The dissenting justices acknowledged that there could certainly be instances in which a juvenile's immaturity mitigated his criminal responsibility, but raised concerns about cases in which the crime was an especially heinous one committed by an older adolescent who demonstrated adult-like premeditation (ironically, this is an apt description of the behavior of the defendant in *Roper*). Here, the relevant developmental evidence concerned the difficulty to reliably predict the future behavior of a juvenile offender. Developmental scientists had made the argument that, even in cases of especially heinous crimes, it was impossible to distinguish between juveniles who were incorrigible and those who were not. The court's majority agreed, noting, "If trained psychiatrists with the advantage of clinical testing and observation refrain, despite diagnostic expertise, from assessing any juvenile under 18 as having antisocial personality disorder, we conclude that States should refrain from asking jurors to issue a far graver condemnation that a juvenile offender merits the death penalty" (*Roper v. Simmons*, 2005, pp. 19–20).

*Roper* was an important decision for three reasons. First, the court widened the prohibition against capital punishment to include an age range in which there are more than just a handful of juveniles who would be affected by the decision (almost no murders are committed by people younger than 16, so the ban against capital punishment established in *Thompson* was of little practical consequence). Second, developmental science showing differences between adolescents and adults was mentioned numerous times during the case's oral arguments and in the court's decision; in previous rulings on juveniles' criminal culpability, the fact that there were differences between adolescents and adults was presented mainly as a matter of common sense. Finally, research on adolescent brain development was introduced as evidence in support of the contention that adolescents were inherently less mature



than adults. Although reference to neuroscience did not appear in the court's decision, it was discussed at oral argument. Indeed, a telling exchange between one of the attorneys and Justice Breyer suggested just how influential neuroscience might have been on the court's deliberations:

Justice Breyer: Now, I thought that the—the scientific evidence simply corroborated something that every parent already knows, and if it's more than that, I would like to know what more.

Mr. Waxman: Well, it's—I think it's—it's more than that in a couple of respects. It—it explains, corroborates, and validates what we sort of intuitively know, not just as parents but in adults that—that—who live in a world filled with adolescents. And—and the very fact that science—and I'm not just talking about social science here, but the important neurobiological science that has now shown that these adolescents are—their character is not hard-wired. (U.S. Supreme Court, 2004, p. 40)

Five years after *Roper*, the court extended the logic it drew upon in abolishing the juvenile death penalty to prohibiting the use of life without parole (LWOP) for juveniles convicted of crimes other than homicide, in *Graham v. Florida* (2010). Referencing its ruling in the death penalty case, the majority explicitly stated, "No recent data provide reason to reconsider the court's observations in *Roper* about the nature of juveniles. As petitioner's *amici* point out, developments in psychology and brain science continue to show fundamental differences between juvenile and adult minds" (*Graham v. Florida*, 2010, pp. 7–8). As in *Roper*, the dissenting justices once again asked why the prohibition of LWOP for juveniles convicted of nonhomicides needed to be categorical.

Although the essential argument advanced in *Graham* was the same as that put forth in *Roper* (i.e., that juveniles' criminal culpability was diminished by their immature decision-making, susceptibility to peer pressure, and unformed character), the LWOP decision was noteworthy in at least two respects (Maroney, 2011). First, *Graham* was the first case in which findings from developmental neuroscience were explicitly referenced in the opinion, albeit in just one sentence: "For example, parts of the brain involved in behavior control continue to mature through late

adolescence" (*Graham v. Florida*, 2010, p. 17). Although developmental differences in behavior remain more important for debates about adolescent culpability than developmental differences in brain structure or function (Steinberg, 2012), the court's stated acceptance of neurobiological immaturity as a part of the more general developmental immaturity argument signaled a shift in thinking that encouraged lower courts to look to brain science in order to justify the differential treatment of adolescents.

Second, the extension of the basic reasoning used in *Roper* beyond the realm of death penalty jurisprudence opened the door for the application of the developmental immaturity argument more generally. If adolescents' relative immaturity made the use of LWOP unfair, why, then, could this argument not be applied to any sentencing decision? Historically, many of the arguments that have been employed to limit the use of the death penalty have relied on the notion that "death is different," which justifies special scrutiny of the circumstances under which capital punishment is applied: "The Court . . . has recognized that the qualitative difference of death from all other punishments requires a correspondingly greater degree of scrutiny of the capital sentencing determination" (*California v. Ramos*, 1983). In *Graham*, the court's majority argued that, as far as adolescents were concerned, LWOP was different, too, noting that a juvenile sentenced to life would spend more years and proportionality more of his life in prison than an adult who received the same sentence. This paved the way for subsequent rulings in state courts that limited the use of excessively long sentences where juveniles were concerned, even if they were not as long as life sentences. In California, for example, the state Supreme Court ruled that a sentence in which the date of parole eligibility exceeded the natural life expectancy of a juvenile violated the portion of the *Graham* ruling that requires that juveniles convicted of nonhomicides be given a meaningful opportunity to demonstrate their rehabilitation.

The *Graham* ruling applied only to instances in which an individual had been convicted of a nonhomicide offense. As such, its practical implications were limited; nearly all individuals serving LWOP sentences for crimes committed as juveniles had been convicted of homicide. In 2012, the court revisited juvenile LWOP in its ruling in two linked cases, *Miller* and *Jackson* (*Miller v. Alabama*, 2012). Each involved a 14-year-old who had been convicted of homicide and sentenced to LWOP. In contrast to *Graham*, these cases potentially affected a far greater number of individuals. At the time they were argued,

nearly 2,500 individuals were serving life sentences in American prisons for crimes they had committed as juveniles.

Just as *Graham* built on *Roper*, *Miller-Jackson* built on *Graham*, with the majority of the court once again concluding that adolescents' developmental immaturity limited their criminal culpability. The opinion noted that the science had become even stronger since *Roper* and *Graham*, pointed out that the court's conclusions in those earlier cases continued to be strengthened by neuroscience, and went into greater detail about the research findings, mentioning the immaturity in adolescence of higher-order executive functions such as impulse control (which had been highlighted in *Graham*), as well as deficiencies in planning ahead and risk avoidance. The *Miller-Jackson* ruling differed from *Roper* and *Graham* in one very significant way, however. Whereas the earlier cases had placed categorical bans on the use of the punishment in question for juveniles, *Miller-Jackson* left LWOP on the table as an option; the ruling only prohibits states from *mandating* LWOP as a sentence for juvenile murderers, on the grounds that such mandates do not permit courts to take into account the juvenile's developmental immaturity. Writing for the majority, Justice Elena Kagan noted, "given all we have said in *Roper*, *Graham*, and this decision about children's diminished culpability and heightened capacity for change, we think appropriate occasions for sentencing juveniles to this harshest possible penalty will be uncommon." It is not yet clear whether this prediction will hold true.

### Summary of Treatment of Children and Adolescents in the Justice System

The treatment of children and adolescents in the justice system has evolved considerably. Prior to the establishment of the juvenile justice system, the justice system treated adolescents older than 14 as adults. The juvenile justice system relegated cases involving minors to a separate, supposedly paternalistic, and nonadversarial process with the aim of rehabilitation. In practice, however, the juvenile justice system could result in harsh punishments without due process protections. *Gault* established the need for such due process protections, but a gradual shift in attitudes toward juvenile crime led to increasing numbers of juveniles being tried in adult courts or subject to severe penalties such as death or life without possibility of parole. Most recently, court decisions have found such sentences inappropriate.

Developmental science has proven to be directly relevant to numerous aspects of minors' treatment by police

and courts. Police may be required to Mirandize minors prior to questioning in situations for which Mirandizing of an adult would not be necessary. Various competencies related to asserting one's rights, participating in one's defense, and assessing one's best interests evolve in ways that impact the treatment of juveniles by police and by the courts. Changes in psychosocial factors such as impulsivity, resistance to peer pressure, and consideration of long-term consequences, meanwhile, are relevant to discussions of juveniles' culpability and to assessments of their amenability to change. Courts have grown increasingly willing to allow such developmental science to inform their thinking on issues of competence and culpability.

### THE LEGAL REGULATION OF MINORS' MEDICAL DECISION MAKING

During the transitional period of adolescence, youth increase in both their desire and capacity to make medical decisions for themselves. That some minors, due to their level of intellectual and emotional maturity, should be empowered to make medical decisions independently is not controversial (Veith, 1994). However, because there is no simple test for psychological maturity, and owing to a legal tradition of deference to parental authority, laws related to adolescents' medical decision making can be complicated and seemingly contradictory.

The present section reviews the philosophical and historical basis for protecting parents' decision-making authority over minors' medical decisions and, conversely, for allowing minors to make such decisions for themselves. Supreme Court decisions are examined in order to clarify the rationale for the current state of the law in this area. Finally, we explore the degree to which developmental science accords with and informs the Supreme Court's reasoning about minors' medical decision making.

For the majority of medical decisions (e.g., whether to treat a sinus infection, or put a cast on a broken bone), the desires and interests of the various stakeholders—the minor, the parent, the state—are aligned. However, when stakeholders' desires and interests come into conflict, the courts must weigh minors' rights (e.g., to liberty and privacy) against parents' rights (to rear their children as they see fit) and the interests of the state. The Supreme Court is only given the opportunity to carry out this responsibility for cases that reach the highest level of appeal, which tend to involve particularly controversial issues. For example, the Supreme Court has heard many constitutional

challenges to laws limiting access to abortion, including several involving minors' access to abortion. As a result, minors' rights with respect to medical decision making have been delineated to a disproportionate extent in abortion-related cases. Cases involving the involuntary commitment of minors to state hospitals, minors' access to contraception, and the rights of minors to refuse recommended medical care have also helped to clarify the legal rights of minors with respect to medical decision-making. In deciding these cases, the court has articulated the competing philosophies that animate the broader, ongoing debate about where parental authority ends and adolescent autonomy begins.

### Two Pillars of Parental Authority

In the area of medical decision making, American law operates on the default rule that parental consent is required before performing any nonemergency medical procedure on a minor. Thus, absent a statute allocating discretion to the minor or the state, parents hold the decision-making authority in the medical sphere. For adults, decision-making autonomy is guaranteed by the Fourteenth Amendment rights to privacy and liberty and may not be infringed upon without due process. Minors are sometimes afforded these same protections, but only after considering the rights and interests of the parent and state.

Parental authority over minor children is grounded in two broad premises. The first is that parents have the right to raise their children as they see fit. This common law principle stems from the view that parents, more than any other parties, are optimally positioned and motivated to make decisions that serve the best interests of their children (*Pierce v. Society of Sisters*, 1925; *Meyer v. Nebraska*, 1923). Consistent with this perspective, U.S. law traditionally affords parents "a substantial measure of authority over [their] children" (*Bellotti v. Baird*, 1979, p. 638). In keeping with this tradition, the Supreme Court has interpreted the Fourteenth Amendment right to privacy as applying to families and affirming parents' right to direct the raising of their children, excepting cases of abuse and neglect.

The second premise for curtailing minors' decision-making autonomy is their presumed lack of competence. This position was made explicit by the Supreme Court in *Bellotti*, a case interrogating the constitutionality of a Massachusetts statute requiring parental consent prior to an abortion being performed on an unmarried minor. Though the court struck down the statute, in its decision,

it asserted that for "important, affirmative" decisions that entail risks, states may limit the ability of minors make their own choices because "during the formative years of childhood and adolescence, minors often lack the experience, perspective, and judgment to recognize and avoid choices that could be detrimental to them" (*Bellotti*, p. 635). In essence, the court was saying that the state may require parental consent because minors lack the capacity to make decisions that serve their own best interests.

These two pillars of parental dominion in medical decision-making—parental authority rights and the presumed incompetence of minors—are apparent in the court's decision in *Parham v. J.R.* (1979, p. 603), a case dealing with the involuntary commitment of minors to state-run mental institutions:

Simply because the decision of a parent is not agreeable to a child or because it involves risks does not automatically transfer the power to make that decision from the parents to some agency or officer of the state. The same characterizations can be made for a tonsillectomy, appendectomy, or other medical procedure. Most children, even in adolescence, simply are not able to make sound judgments concerning many decisions, including their need for medical care or treatment. Parents can and must make those judgments.

What is clear from this excerpt is that under U.S. law (absent special circumstances) decision-making authority rests, by default, with the parent (the parental rights pillar); and minors—even older ones—are not considered competent to make such decisions for themselves (the incompetence pillar). The parental rights pillar is a philosophical stance combined with an observation of traditional practice. The second position, however, is a falsifiable claim and has been subjected to the scrutiny of developmental science.

### Exceptions to Parental Authority—When Minors' Rights Prevail

Despite the tradition of minors' rights to liberty and privacy being subjugated to parental authority, there are cases in which the law makes an exception and awards decision-making autonomy to minors.

#### *Emancipated Minor*

One such exception is applied to minors whose situation places them beyond the scope of parental control. As noted in the Family section previously, "emancipated minor" status is generally assigned in situations where a minor is enrolled in military service, is married, is a

parent, or is otherwise arguably independent of his or her parents. Common law permits emancipated minors to be treated like adults for many purposes, including medical decision-making (Garber, 2009; Hill, 2012; Robertson, 2008).

### *Adolescents' Privacy Rights*

Another exception to parental authority has arisen as a reaction to the concern that if adolescents must involve their parents in certain medical decisions, they will forego or postpone needed testing and treatment—especially for conditions linked to behaviors that adolescents often prefer to keep secret from their parents, such as substance use and sexual behavior (Berlan & Bravender, 2009; Cheng, Savageau, Sattler, & DeWitt, 1993; Ford, Millstein, Halpern-Felsher, & Irwin, 1997; Lehrer, Pantell, Tebb, & Shafer, 2007). In response to this problem, many states have enacted laws affording minors access to confidential care for such sensitive medical issues. For example, all 50 states and the District of Columbia permit minors to seek testing and treatment for sexually transmitted infections without parental consent (though some impose minimum age thresholds). Twenty-one states grant minors unfettered access to prescription contraception (Guttmacher Institute, 2012). In some states, minors are also given statutory access to mental health treatment (including for drug and alcohol abuse) without parental consent (Lallemont, Mastroianni, & Wickizer, 2009). Where such laws exist, the state has essentially intervened to limit parental rights on the grounds of serving the best interests of minors and society, both of which might suffer if adolescents opted not to seek needed reproductive and mental health care.

Although state laws may recognize that adolescents will refrain from seeking needed medical care if they are not guaranteed confidentiality, the Supreme Court does not view this concern as sufficient to justify invalidating parental notification laws, at least in abortion cases. In *H.L. v. Matheson* (1981, 413), an abortion case involving a 15-year-old, dependent minor, the court declared: “That the requirement of notice to parents may inhibit some minors from seeking abortions is not a valid basis to void the statute as applied to appellant. . . . The Constitution does not compel a state to fine-tune its statutes so as to encourage or facilitate abortions.” Accordingly, this is a narrow finding may not generalize to nonelective procedures.

On the other hand, in blocking a law that would have barred (among other activities) the sale of nonmedical contraceptives to minors under the age of 16 (*Carey v. Population Services*, 1977), the court recognized minors’

right to privacy in their decisions related to sexual behavior. In this case, the court bundled decisions about contraception use, which may be thought of as a form of medical decision-making, into this privacy right. The court also refrained from articulating a lower age limit for privacy rights related to sexual behavior, noting the difficulty of balancing minors’ constitutional rights against the interests of the state in regulating their conduct: “The question of the extent of state power to regulate conduct of minors not constitutionally regulable when committed by adults is a vexing one, perhaps not susceptible of precise answer. We have been reluctant to attempt to define ‘the totality of the relationship of the juvenile and the state’” (*Carey v. Population Services*, 1977, p. 692).

Furthermore, the court strongly rejected the argument that minors may be denied access to contraception (or abortion) in order to further the state’s interest in discouraging sexual behavior among the young. In condemning the idea that the state’s response to adolescent sexual behavior should be to make the behavior more hazardous, the court (quoting *Eisenstadt v. Baird*, 1972) asserted: “‘It would be plainly unreasonable to assume that [the State] has prescribed pregnancy and the birth of an unwanted child [or the physical and psychological dangers of an abortion] as punishment for fornication.’ We remain reluctant to attribute any such ‘scheme of values’ to the State” (*Carey v. Population Services*, 1977, p. 695). Also, although the court’s decision in this case was not based on rejection of the appellants’ theory that the law would decrease sexual behavior among adolescents, the court did note that the appellants lacked empirical evidence to support that claim, whereas the appellees provided ample evidence that withholding contraception does *not* deter adolescents from sexual behavior.

### *The Mature Minor Rule*

That some youth attain adult-like intellectual capacities long before they reach the age of majority is neither controversial nor a recent discovery. Long before the evolution of current developmental science, the law began carving out exceptions to parental authority based on the observed ability of many minors to exercise good judgment.

Common law dating back to the colonial period acknowledges that some minors, referred to as “mature minors,” possess sufficient faculties to be afforded decision-making autonomy. Though the specific requirements of mature minor statutes vary (with some including criteria unrelated to reasoning capacity, such as being pregnant), minors who meet the standards are empowered



to make their own decisions about medical treatment, even if they have not been granted state-sanctioned emancipated minor status (Garber, 2009; Hill, 2012).

The mature minor rule is highly relevant to the much newer legal concept of informed consent. Under current law, a patient must provide informed consent to undergo any treatment or procedure that entails risk, except in emergency situations. At its core, the requirement of informed consent is met when “all parties to [a given] transaction take part willingly in awareness of ways in which others’ proposed action will bear on them” (O’Neill, 2003, p. 4). Formal informed consent procedures are employed in many areas besides medicine, including research participation and contractual agreements. In medicine, informed consent requires, among other things, that the patient possess the capacities to understand the nature of a medical intervention and appreciate its potential short- and long-term consequences (Grisso & Appelbaum, 1998). Many minors are appraised by health care providers as possessing these capacities. Absent prohibitory laws, health care providers may invoke the mature minor rule in order to provide standard medical treatment without parental consent (Berlan & Bravender, 2009).

However, judging the capacity of a minor to provide consent is not straightforward. There is no “gold standard” method for making such a determination and the courts have provided no official guidance as to how to do so (Veith, 1994). Doctors typically bear the responsibility to make this assessment. If a doctor determines that a minor is competent to provide consent, the doctor then becomes obliged to guard the minor’s confidentiality, meaning that the doctor may not inform the parent of the adolescents’ treatment (Berlan & Bravender, 2009). Thus, in judging a minor to be competent, the doctor is also allocating decision-making authority to the minor, with all its attendant responsibilities and protections. In doing so, the doctor places him or herself at some risk of litigation; the parent may later claim that his or her parental rights were infringed upon (Robertson, 2008). The evaluation of a minor’s capacity to consent is further complicated by the dynamic nature of the threshold for this capacity. A higher degree of cognitive capacity may be required to appreciate the nature and potential consequences for some medical interventions than for others (Grisso & Appelbaum, 1998).

### Judging Maturity in Medical Contexts

In the United States, there is quite a bit of variability in the laws related to adolescents’ ability to make their own

health care decisions. Some states lack relevant legislation altogether. Among the states that do have germane laws, several make “bright line” distinctions between classes of minors, barring access for those under a certain age to confidential medical treatment. Such laws are efficient in that they make it simple for health care providers to know how to proceed in any given case and because they excuse the provider from having to evaluate the minor’s decision-making capacity (Robertson, 2008). However, these types of laws are ethically and constitutionally questionable in that they deny rights to some minors who may be competent to make their own decisions. Research suggests that these laws also have the practical drawback of discouraging some youth who would benefit from medical attention from seeking it (Berlan & Bravender, 2009; Lallemon et al., 2009; Robertson, 2008). Other states, recognizing that psychological maturity is not dictated by chronological age, have adopted laws that allow for flexible determinations of an adolescents’ capacity to consent.

The flexible, individualized approach is the one favored by the United Nations. The United Nations Convention on the Rights of the Child (signed but not ratified by the United States) calls on state entities to encourage children to be involved in decisions related to their medical care in a manner that recognizes their “evolving capacities.” In the United States, associations representing health care providers, including the American Medical Association (AMA), the American Academy of Pediatrics, the Society for Adolescent Medicine, the American Academy of Family Practice, and the American College of Obstetrics and Gynecology, have also taken positions that favor individualized assessment of an adolescent’s capacity to make his or her own medical decisions while simultaneously supporting parental involvement (Berlan & Bravender, 2009). For example, the AMA’s Code of Medical Ethics states that:

Physicians who treat minors have an ethical duty to promote the autonomy of minor patients by involving them in the medical decision-making process to a degree commensurate with their abilities.

When minors request confidential services, physicians should encourage them to involve their parents. This includes making efforts to obtain the minor’s reasons for not involving their parents and correcting misconceptions that may be motivating their objections.

Where the law does not require otherwise, physicians should permit a competent minor to consent to medical care and should not notify parents without the patient’s consent.

Depending on the seriousness of the decision, competence may be evaluated by physicians for most minors. When necessary, experts in adolescent medicine or child psychological development should be consulted. Use of the courts for competence determinations should be made only as a last resort. (AMA, 1994)

Though the Supreme Court has not explicitly endorsed any specific mature minor rule, it has repeatedly recognized, in cases related to abortion (*Akron v. Akron Center for Reproductive Health Inc.*, 1983; *Bellotti*, 1979; *Hodgson v. Minnesota*, 1990; *Planned Parenthood Association of Kansas City v. Ashcroft*, 1983; *Planned Parenthood of Southeastern Pennsylvania v. Casey*, 1992), that minors may be mature enough to make their own medical decisions. For example, it has invalidated any parental consent or notification requirement that did not also provide a judicial bypass option. Judicial bypass is a mechanism that allows a pregnant minor to access abortion without parental consent by going through the court. If a judge evaluates the minor to be mature enough to consent to the procedure or determines that the abortion would serve her best interests, then the minor may proceed with the abortion without parental consent or notification. In *Bellotti*, the court made clear that once a judge has deemed a minor to have mature decision-making faculties, the minor must, under the equal protection clause of the Fourteenth Amendment, be afforded decision-making autonomy on par with that of adults (*Bellotti*, 1979). This means that the judge cannot then veto the “mature” minor’s “informed and reasonable decision to have an abortion” (*Bellotti*, 1979, p. 630, quoting the Massachusetts’ Supreme Judicial Court’s interpretation of the statute). Furthermore, in *Akron*, the court expressly prohibited states from making “a blanket determination” that minors below a given age (15 in this case) are incapable of demonstrating sufficient maturity to make an informed decision to have an abortion. This holding clearly favors the individualized approach (promoted by the United Nations) to the assessment of maturity in minors.

### Developmental Science and Medical Decision Making

The general consensus that minors, on average, exhibit poorer decision-making than adults serves as one of the primary justifications for limiting their autonomy under the law. Simultaneously, the law, as reviewed in this section, recognizes that decision-making competence increases with age gradually across childhood and adolescence rather than “com[ing] into being magically only when one

attains the state-defined age of majority” (*Planned Parenthood of Central Mo. v. Danforth*, 1976, p. 74). Of course, the question of how and when capacities that undergird good decision-making develop is an empirical one. At present, the best research suggests that by midadolescence, the abilities of youth to understand the facts of a medical or legal decision and reason rationally about it are often on par with that of adults, at least under conditions of low time-pressure and under low emotional arousal (Steinberg, Cauffman, et al., 2009). Studies that have compared age groups in decision-making tasks designed to probe legally relevant decision-making capacities identify different ages at which adolescents’ abilities (on average) become equivalent to adults’ (e.g., Grisso et al., 2003; Weithorn & Campbell, 1982), with the line tending to fall between 14 and 16 years of age. Furthermore, the ability to make these decisions optimally appears to track improvement in basic cognitive capacity (e.g., short-term memory, verbal fluency), which reaches adult levels by about Age 16 (Steinberg, Cauffman, et al., 2009). It is important to bear in mind, however, that studies investigating decision-making competency typically do not permit adolescent subjects to consult with medical professionals or other adults, as youth often do when really faced with important decisions (Henshaw & Kost, 1992). Such consultations may lower the age at which minors’ decision-making competence becomes indistinguishable from adults’. Overall, developmental science supports the view expressed in the mature minor doctrine and in the Supreme Court’s decisions reviewed here, that many adolescents possess sufficient capacity for reasoning and understanding to provide informed consent.

Yet, developmental science has not played a major role in shaping the law surrounding adolescents’ medical decision making. Even when developmental scientists have attempted to influence the law as it relates to minors’ medical decision making, the Supreme Court’s majority holdings do not appear to have been significantly affected. For example, despite an amicus brief from the American Psychological Association (APA) presenting evidence that “with respect to the capacity to understand and reason logically, there is no qualitative or quantitative difference between minors in mid-adolescence, i.e., about 14–15 years of age, and adults” (AMA, 1994, p. 10), the court in *Hodgson v. Minnesota* (1990) upheld a state law requiring that minors obtain parental permission or judicial approval before obtaining an abortion. Even Justice Marshall’s full-throated (dissenting) argument against the constitutionality of parental consent, parental notification and judicial bypass procedures, which noted evidence of

the harmfulness of these procedures and the unreasonableness of assuming a judge is better qualified than a doctor to assess a young woman's maturity level, did not cite the developmental literature on adolescents' decision-making capacities. His objection to these impediments to minors' access to abortion were apparently based on the view that the right to privacy should have prevailed, irrespective of decision-making capacity: "An 'immature' minor has no less right to make decisions regarding her own body than a mature adult" (*Hodgson*, 1990, p. 473). The minimal impact of developmental science in this sphere is likely attributable to the fact that legal recognition of mature minors predates the relevant research. Still, the developmental evidence supports the establishment of a lower default age than 18 for the presumption of decision-making competence in the medical sphere.

In contrast, in the area of crime and punishment, developmental science has begun to have an impact on Supreme Court decisions. As described in the juvenile justice section of this chapter, the court cited neurological and behavioral evidence of minors' *immature* decision-making capacities, supplied in amicus briefs by the American Psychological Association (APA), in its 2005 decision to proscribe the death penalty for juvenile offenders (*Roper v. Simmons*) and again in its 2010 decision barring life sentences without the possibility of parole for juveniles convicted of nonhomicide crimes (*Graham v. Florida*). For its argument opposing permanent sanctions for juvenile offenders, the APA was accused by members of the court of contradicting its prior position in *Hodgson*, where it had emphasized the decision-making competence of adolescence. As explained in Steinberg, Cauffman, et al. (2009), an article authored by scholars who had contributed to the amicus briefs, the apparent discrepancy can be resolved by acknowledging the disparate circumstances surrounding medical versus criminal decision-making and how these affect adolescents' behavior. Choices about nonemergency medical treatment are typically made over the course of days and weeks, enabling reflection and information seeking by the adolescent. Such conditions allow for maximal exertion of one's reasoning capacities. On the other hand, decisions to commit crimes are often not premeditated at all—they can result from impulsive, unthinking reactions. Furthermore, these decisions may be influenced, particularly in adolescence, by emotional arousal and peer pressure. The proposed reason for adolescents' greater susceptibility to criminogenic contexts is that, although midadolescents

may have adult-like reasoning and understanding, even older adolescents and young adults differ substantially from mature adults in terms of their ability to regulate impulses and in their immediate responses to risk and reward (see Steinberg et al., 2008, for a review). Consequently, the circumstances under which many adolescent crimes are committed—under time pressure, under high arousal, in the presence of peers—tend to undermine adolescents' still-developing self-regulatory capacities and, as a result, magnify differences between adolescents' and adults' decision-making (e.g., Chein, Albert, O'Brien, Uckert, & Steinberg, 2011; Figner, Mackinlay, Wilkening, & Weber, 2009; Gardner & Steinberg, 2005). Therefore, it makes sense for judges and lawmakers to consider the context in which a decision is likely to be made when evaluating adolescents' capacities and culpability.

### Summary of Legal Regulation of Minors' Medical Decision Making

The legal arguments for and against affording minors decision-making autonomy with respect to medical care center on the tension between deference to parental authority and respect for minors' individual rights to liberty and privacy. With a few exceptions, the law tends to lean more toward the parental rights side of the scale, as was the case with legal treatment in other family-related contexts discussed earlier. Even for the extraordinarily personal decision of whether to end a pregnancy, the court permits states to compel minors to obtain parental consent or else face a judicial hearing before being allowed to make a decision not to become a parent. It does so despite the fact that, the birth of that child would, by law, automatically release the mother from the constraints of parental authority (and remove from her own parents any parental obligations to her) by qualifying her for "emancipated minor" status. At the same time, for less controversial medical treatment, many states operate on common law or explicit rules that permit doctors to provide treatment without parental notification or consent if they perceive that a minor is mature enough to make informed decisions. Thus far, developmental science has not had a major impact of the legal reasoning in this area, most likely because law has long acknowledged that some minors possess mature decision-making capacities, but also because the maturity of a nonemancipated minor does not necessarily negate rights of parental authority.

## LEGAL REGULATION OF ADOLESCENCE IN SOCIETAL CONTEXTS

Because of their increasing autonomy, adolescents (unlike younger children) often navigate social and commercial interactions without the intervention of their parents. The law that has sprung up to regulate these transactions draws heavily on three principles that are specific to minors and serve as justifications for limiting minors' First Amendment rights. These principles are the state's interest in protecting minors from (1) their own poor judgment, (2) adults who would seek to exploit them, and (3) influences that could disrupt proper moral development. Hereafter, we refer to these as the *judgment*, *exploitation*, and *morality* concerns, respectively.

In this section, we examine the ways in which these three concerns have guided legal restrictions on adolescents' societal transactions, focusing specifically on contracts, media exposure, and sexual behavior. These examples illustrate the limitations on adolescents' autonomous conduct in society and the rationales proffered by lawmakers for these restrictions. They also set the stage for understanding current efforts to legally regulate adolescents' use of interconnected digital technology (e.g., Internet-connected computers, cell phones, and other mobile devices), particularly with respect to messages with sexual content ("sexts" or "sexting"). The intersection of adolescent sexual expression with social media has demanded new legislation balancing adults' conflicting impulses to protect and to punish youth involved in sexting.

In many of the legal domains considered, the overarching protective approach applied by the courts makes developmental science largely irrelevant. The state wishes to protect the interests of minors, regardless of their developmental status. The exceptions involve cases in which minors' rights to self-determination are in question. When do adolescents have the necessary developmental attributes to warrant a right to make autonomous medical decisions? To choose whether or not to have sex, and with whom? To decide whether to submit to police questioning? To participate in their own legal defense? How does a minor's developmental status influence their culpability for antisocial behavior, and their amenability to change? Can a minor be considered incorrigible if key aspects of her identity are still developing? Developmental science provides evidence that informs such questions, and, as such evidence has accumulated, courts

have grown increasingly willing to consider such evidence in their deliberations.

### Contracts

The ability to enter into contracts is a fundamental prerequisite for autonomous functioning in modern society. For contracts to be legally valid, the parties entering into them must do so voluntarily and must be informed about all relevant details of the transaction, enabling both parties to reasonably assess its potential risks and benefits. In the section dealing with medical decision-making, we discussed the considerations that affect whether adolescents may consent to receive medical treatment. There, the question hinged largely on adolescents' judgment—that is, whether adolescents are capable of fully appreciating the risks of various medical interventions, considering that their cognitive and emotional capacities are still maturing. In other contractual transactions, the same concern informs legal regulation. Furthermore, for contracts entered into by adolescents outside of the medical arena, the courts have also considered the possibility that adults will seek to exploit adolescents' poor judgment in order to further their own self-interest. (In medical situations, it is generally assumed that the motivations of health care providers are aligned with those of their patients.)

The Tennessee Supreme Court addressed contracts between adults and minors in *Dodson v. Shrader* (1992). The case dealt with a 16-year-old who purchased a truck from an adult, opted not to repair the truck when a mechanical problem arose 9 months later, and continued to drive the truck until the engine "blew-up." The minor then attempted to return the truck to the adult and recover his full payment (\$4,900) despite the fact that the truck's value had depreciated to \$500. A lower court had "reluctantly" permitted the minor to rescind the contract and had ordered the adult to refund to the minor the full amount paid, upon the return of the truck (which had incurred further damage when struck by a hit-and-run driver). In doing so, it cited the common law "infancy doctrine," which contains language allowing minors (referred to as "infants") to void contracts that are clearly contrary to their interests, but also those that *might* be unfavorable to their interests (i.e., where it is uncertain whether the contract advantages the minor or the adult). According to the court, the infancy doctrine serves legitimate state interests with respect to judgment and exploitation; its purpose is "to protect minors



from their lack of judgment and ‘from squandering their wealth through improvident contracts with crafty adults who would take advantage of them in the marketplace’” (*Dodson*, 1992, p. 547, citing *Halbman v. Lemke*, 1980).

Still, the Tennessee Supreme Court vacated the lower court’s decision and, in doing so, invoked the morality concern. The court set forth new legal requirements to apply to cases in which the relevant contract is reasonable and the adult has entered into it “in good faith.” Specifically, the court declared, an adult vendor need only provide a partial refund to a minor consistent with the item’s depreciated value resulting from the minor’s use of it. Though the court reiterated the importance of protecting minors from unfair or coerced contracts, its decision turned on what it viewed to be the potential for minors to exploit the law:

It does not appear consistent with practice of proper moral influence upon young people, tend to encourage honesty and integrity, or lead them to a good and useful business future, if they are taught that they can make purchases with their own money, for their own benefit, and after paying for them, and using them until they are worn out and destroyed, go back and compel the vendor to return to them what they have paid upon the purchase price. Such a doctrine can only lead to the corruption of principles and encourage young people in habits of trickery and dishonesty. (*Dodson*, 1992, p. 550)

Thus, acting on the state’s interest in preventing youth from acquiring corrupt values, the court ruled that minors must be held to a higher standard of responsibility in contractual transactions than was required by the infancy doctrine.

### Media Exposure

In *Dodson*, the Tennessee Supreme Court underscored the state’s interest in facilitating the proper moral development of minors. The same principle has long served as the rationale for laws restricting minors’ access to particular forms of media and entertainment. In the landmark case of *Ginsberg v. New York* (1968), the United States Supreme Court cited the morality concern in upholding a New York obscenity law prohibiting the sale of pornography to minors. In U.S. law, the word *obscenity* has specific denotations. Following *Miller v. California* (1973, p. 24), obscene material is (somewhat vaguely) defined as that which (a) appeals, by contemporary standards, to “the prurient interest,” (b) depicts sexual conduct offensively, and (c) “lacks serious literary, artistic, political, or scientific value.” Critically, material classified as obscene

is included in the small category of speech understood as “unprotected” (i.e., exempted from First Amendment protection) for all citizens, regardless of age. As such, the obscenity label is powerful; it grants the state rare permission to substitute its judgment for that of competent adults. In *Ginsberg*, the court addressed whether a lower threshold for obscenity could be applied for minors than for adults.

The case was brought by a store owner convicted under New York law of selling pornography to a minor (aged 16). The materials in question were “girlie” magazines, which could be sold legally to those 17 and older. One of the appellant’s contentions was that, by restricting minors’ access to material deemed suitable for adults, the statute in question represented an “unconstitutional deprivation of protected liberty” (*Ginsberg*, 1968, p. 636). The Supreme Court disagreed, finding instead that the restriction was justified on morality grounds. The court concurred with the state’s assessment that media with sexual content served as “a basic factor in impairing the ethical and moral development of our youth and a clear and present danger to the people of the state” (p. 641). In its decision, the court established that different obscenity standards may be applied for minors than for adults. Furthermore, noting that it was “very doubtful” that the state’s ‘clear and present danger’ claim represented a “scientific fact,” the court emphasized that the state need not supply empirical evidence to support such assertions: “To sustain state power to exclude material defined as obscenity by [the statute] requires only that we be able to say that it was not irrational for the legislature to find that exposure to material condemned by the statute is harmful to minors” (p. 641). In effect, the very act of defining a class of speech as harmful to the moral development of youth (i.e., obscene for minors) immediately relieves the state of any requirement to support this claim.

However, U.S. law is quite particular about the type of material that may be considered harmful to minors. In a recent case, *Brown v. Entertainment Merchants Association* (2011), the Supreme Court drew a sharp distinction between media with sexual versus violent content. The case originated in a challenge to a California statute that attempted to use the *Miller* obscenity standards as justification for outlawing the sale of violent video games to minors. Noting the Western tradition of allowing minors access to all sorts of media with violent content, ranging from books, to films, to cartoons, the court determined that—contrary to its decision with respect to pornography—the state was obligated prove its claim that violent media was harmful to

minors. Furthermore, the court was not impressed with the state's evidence in support of this claim, which consisted of psychological studies linking violent video games to heightened aggression. In striking down the statute, the court noted that the empirical evidence pointed to a correlation between violent video games and aggression, but failed to "prove that violent video games *cause* minors to *act* aggressively (which would at least be a beginning)" (Miller, 2011, p. 2740). This statement seems to indicate that the court is open to amending its position in light of future evidence of harm to minors, but will apply rigorous scrutiny to such evidence and consider it only necessary, not sufficient, to justify curtailing minors' right to consume violent media.

### Sexual Behavior

Underlying the notion that depictions of sex pose a threat to minors is the traditional view that sexual behavior by unmarried minors is to be discouraged. Indeed, all states have regulations intended to delay or deter minors from engaging in sexual behavior. These laws exist in tension with minors' rights to privacy for matters related to procreation (*Carey v. Population Services*, 1977), but are nevertheless rationalized by invoking both judgment and exploitation concerns. In addition, in *Michael M. v. Superior Court of Sonoma County* (1981, p. 475) the Supreme Court validated the State's specific interest in preventing "illegitimate teenage pregnancy." Some state legislatures have cited the similarly practical state interest in reducing welfare dependency as a rationale for prohibiting adolescent sex (James, 2009). Notably, the court refrained in this case from invoking the morality concern, perhaps betraying hesitancy to assert that sex is inherently detrimental to minors' moral development.

State supreme courts, in contrast, have proved willing to refer to morality in their defense of laws regulating adolescent sexual behavior. For example, in 1964, the California Supreme Court offered as justification for a statutory rape law the presumption that an underage woman was "too innocent and naive to understand the implications and nature of her act (*People v. Hernandez*, 1964, p. 531). The court goes on to explain:

The law's concern with [an underage woman's] capacity or lack thereof to so understand is explained in part by a popular conception of the social, moral and personal values which are preserved by the abstinence from sexual indulgence on the part of a young woman. An unwise disposition of her sexual

favor is deemed to do harm both to herself and the social mores by which the community's conduct patterns are established. (p. 531)

More recently, Arizona's Supreme Court, in affirming a 16-year-old boy's parole revocation after he was found to have fondled the breasts of a 14-year-old girl, cited the morality concern as a justification for restricting minors' sexual activity, with no further analysis related to that principle: "We are persuaded that the state has a significant interest in proscribing sexual conduct between minors. The state has a strong interest in the ethical and moral development of its minors" (*Matter of Pima County*, 1990, p. 31). Thus, state lawmakers appear to rely primarily on circular moral judgments to justify infringement on minors' privacy rights in sexual matters and, for the most part, the courts uphold their reasoning.

Laws regulating adolescent sexual behavior vary from state to state. One of the few points of consensus is that adults should not be permitted to engage in sex with children. Accordingly, all 50 states have age of consent laws, which designate an age below which a minor's willing participation in sexual intercourse with an adult partner does not inoculate the latter against criminal prosecution for rape or sexual assault. However, the age of consent varies. It ranges from 16 to 18 years of age for sex with an adult partner and from 12 to 18 years of age for consent between minors. Some laws are inflexible, establishing a single age of consent and making no further accommodations, whereas others are developmentally titrated. For example, California law simply sets the age of consent at 18 years, meaning it is illegal for two 17-year-olds to have sex with one another. At the other extreme of nuance, Washington defines the general age of consent as 16, but permits minors as young as 12 to legally consent to sex with a partner up to 2 years older; the law applies a sliding scale, permitting increasingly large age discrepancies between partners as minors age (U.S. Department of Health and Human Services, 2012). Compounding the complexity of these laws are efforts to regulate nonintercourse sexual contact, which involve distinct sets of rules and age limits. Even though age of consent laws were originally intended to regulate *adults'* sexual behavior (i.e., to deter them from having sex with minors), they are also used to regulate sexual behavior among adolescents.

The inconsistency across states in age of consent laws reflects, among other issues, the limited role that social science plays in the drafting and amending of these laws. Yet, considering the varying circumstances under which

adolescent sex occurs as well as individual differences in maturation, it would be difficult for developmental science designate a discrete, uncontroversial age at which youth should be considered capable of consenting to sex. Unlike medical informed consent, decisions surrounding sex often occur spontaneously, under conditions of arousal, and without consultation with trusted adults. These are conditions under which adolescents' judgment may be most discrepant from that of adults (Steinberg, 2009b). As a result, minors who are mature enough to make medical or legal decisions that serve their best interests may fail to make sexual decisions that do so.

Due in part to trepidation about and resistance to community research on adolescent sexual behavior (Blinn-Pike, Berger, & Rea-Holloway, 2000), there is limited empirical insight into whether sex is, as the law often assumes, harmful to youth. Existing studies suggest that among adolescents who engage in sex, the vast majority experience no adverse psychological consequences (Meier, 2007; Vrangalova & Savin-Williams, 2011); those who do tend to be female adolescents who initiate sex early relative to their peers (Meier, 2007). One of the few large-scale, longitudinal studies of the topic found no indication that adolescent sex has enduring detrimental effects on psychological well-being (Spriggs & Halpern, 2008). Moreover, at least one recent study found sexual experience (versus abstinence) during adolescence to be associated with greater well-being (Vrangalova & Savin-Williams, 2011). At this point, then, it appears that adolescent sex does not inflict psychological harm on youth. Whether it inflicts moral harm, as presumed by state law, is a subjective question better suited to philosophy or theology than to science.

Although further research is needed to fully understand the effects of adolescent sex, there is no question that sexual behavior is a typical feature of adolescence. Surveys indicate that sexual intercourse is so common during adolescence as to be normative. A recent national survey of high school students found that 33% of 9th-grade students had engaged in sexual intercourse—by 11th grade, more than half had done so (53%). Sexual contact not involving intercourse, which is also frequently illegal for adolescents, is even more common (Vrangalova & Savin-Williams, 2011). The disconnect between state laws criminalizing adolescent sex acts and the actual rates of adolescent sex acts results in these laws being only rarely enforced (James, 2009; Oberman, 2000). Justice systems would be overwhelmed if even 1% of violations related to underage sexual contact were prosecuted. In noting the apparent failure of California's

statutory rape laws to deter underage sex, Supreme Court Justice Brennan observed that in 1976, despite the occurrence of about 50,000 pregnancies of underage women in the state in the prior year, only 413 males had been arrested on statutory rape charges (*Michael M. v. Superior Court*, 1981). However, there are instances when these laws are enforced, despite the sexual activity in question being consensual. When this occurs, the result can be punishment that is severely disproportionate to the gravity of the offense, such as prison sentences and permanent registration as a sex offender (James, 2009). In some cases of sex between underage partners, both adolescents are charged with sexual assault (see James, 2009, for a review), which calls into question whether the enforcement of the laws furthers their purported purpose—to protect minors.

In some cases, public outcry has led to amendments of statutory rape and assault laws. A series of events in Georgia provides an example of this path to reform. *Humphrey v. Wilson* (2007) dealt with a case in which a 17-year-old Georgia boy received an extraordinarily harsh sentence for having received oral sex from a 15-year-old girl. The boy was convicted of aggravated child molestation—a felony—and sentenced mandatorily to 10 years in prison, after which he would have to register as a sex offender. Adding to the perceived unfairness of this outcome was the fact that had the teens engaged in intercourse rather than oral sex (which was defined under state law as “sodomy”), the offense would have been a misdemeanor; the statutory rape law included an age-difference clause that was absent from the molestation law. Soon after this highly publicized conviction, Georgia revised the child molestation statute so that minors engaging in oral sex were treated similarly to those who engaged in sexual intercourse; a change which the Georgia Supreme Court later described as “represent[ing] a seismic shift in the legislature's view of the gravity of oral sex between two willing teenage participants” (*Humphrey*, 2007, p. 507). In 2007, the Georgia State Supreme court found the boy's sentence to be “cruel and unusual” due to its disproportionality and struck it down. However, despite reforms in some states, the potential for prosecution remains one of major risks attached to adolescent sex.

### Sexting

Adolescents have also become ensnared by outsized criminal charges in connection with the practice of “sexting,” defined in *Miller v. Mitchell* (2010) as “sending or posting sexually suggestive text messages and images, including

nude or seminude photographs, via cellular telephones or over the Internet.” Historically, adolescents have been early and enthusiastic adopters of new communication technologies and digital communication media (cell phones, email, texting, social networking universes) have been no exception. In light of key features of the adolescent period—for example, sexual experimentation, social competition, desire for exciting experiences, susceptibility to peer influence, poor impulse control—it is not surprising that adolescents quickly began to use digital media to transmit sexual images of themselves to their romantic interests. Sexting is now a fairly common practice with about one third of young adults admitting to sending nude photos of themselves via cell phone (Associated Press & MTV, 2009). Among youth under 18 years of age, the proportion sending naked images of themselves (via phone or Internet) appears to be lower, though the estimates, owing to different methodologies and samples, vary widely from 1% (Mitchell, Finkelhor, Jones, & Wolak, 2012) to 27% (Temple et al., 2012).

Due to U.S. states’ strong interest in preventing adults from sexually exploiting minors (e.g., *New York v. Ferber*, 1982), state and federal laws contain strict prohibitions against child pornography. Federal law makes it a felony offense to create, possess, and disseminate visual depictions of a minor engaged in “sexually explicit conduct,” meaning real or simulated sex acts or the “lascivious” display of genital regions. State child pornography laws vary and sometimes employ a lower threshold, proscribing images that are “sexually suggestive,” regardless of whether they feature nudity or a sex act. Such laws do not provide exceptions for images produced by minors of themselves or of other minors (Haynes, 2012). A child pornography conviction carries severe penalties, including mandatory prison sentences and registration as a sex offender.

The definitions of child pornography in these laws encompass many images produced in the course of adolescents’ sexting. As a result, the first decade of the 21st century saw prosecutors charging or threatening to charge minors involved in sexting with child pornography offenses; a phenomenon that ignited national and international outcry (Haynes, 2012). In the controversy that ensued, there was little dispute that the sexts themselves posed a potential threat to minors. Such images can be (and have been) used as a means of bullying. If shared, they could also negatively impact an individual’s long-term educational and employment prospects. Rather, the crux of the conflict was whether it was ethical to use laws intended to protect minors from sexual exploitation as a means to

punish minors for a behavior viewed by many as a digital form of flirtation (Eraker, 2010).

Judges faced with this question have reached contradictory conclusions. In a 2007 Florida case (*A.H. v. State*, 2007) involving the exchange between two minors of digital images of themselves having sex, the Appellate Court denied that the child pornography statute under which the defendants were charged was intended solely to protect minors from exploitation by adults. Quoting an earlier case (*State v. A.R.S.*, 1996, p. 238), the majority argued, “The statute is not limited to protecting children only from sexual exploitation by adults, nor is it intended to protect minors from engaging in sexual intercourse. The state’s purpose in this statute is to protect minors from exploitation by anyone who induces them to appear in a sexual performance and shows that performance to other people.” In addition, the court claimed the child pornography statute was also intended to protect minors from their own immature decision making, stating that “the statute was intended to protect minors like appellant and her co-defendant from their own lack of judgment . . . if these pictures are ultimately released, future damage may be done to these minors’ careers or personal lives. These children are not mature enough to make rational decisions concerning all the possible negative implications of producing these videos” (*State v. A.R.S.*, 1996, pp. 238–239). Going even further, the majority averred that the “mere production” of images portraying sexual conduct by minors (irrespective of their subsequent use or distribution) could cause “psychological trauma to the teenagers involved” (p. 239).

In this same case, one judge dissented, offering an argument in support of the appellant’s claim that her privacy rights should have prevailed. He pointed out the sexual act that was the subject of the photographs was constitutionally protected according to the court’s earlier holding in *B.B. v. State* (1995), which found that the Constitutional right to privacy extends to minors’ sexual activity. The judge further reasoned that because the images produced during the sexual act were shared only between the involved parties and were not intended for distribution, they should be treated under the law as part of the private sexual act. This dissent voiced the view, espoused by many who protested the prosecution of adolescents under child pornography laws, that it was profoundly wrong for the state to use a law “designed to protect children from abuse by others” in order to “punish a child for her own mistake” (p. 239).

In an effort to provide prosecutors with less draconian tools for discouraging adolescents from sexting, many



states have, in recent years, passed or attempted to pass new statutes tailored to this phenomenon. The drafting of targeted statutes serves not only to eliminate disproportionate punishment, but also enables lawmakers to discriminate between the different ways in which adolescents use (and misuse) digital technology. For example, Pennsylvania passed a law (House Bill 815) defining sexting (“the offense of transmission of sexually explicit images by a minor”) and establishing different charges of graded severity for the various forms of sexting (e.g., a minor taking a nude photo of him or herself is a noncriminal summary offense, whereas a minor forwarding a picture of another minor “in a state of nudity” without the subject’s knowledge or consent is a second degree misdemeanor) (National Conference of State Legislatures, 2010). In effect, this law is sensitive to the difference between sexting as a form of flirtation or self-expression and sexting as a means of bullying. In addition, some states have amended their child pornography statutes so that they exclude cases of sexting. Colorado, for example, altered its child pornography law to exclude any “actor” who is less than 4 years older than the subject of the image, provided that the subject is at least 15 years of age (National Conference of State Legislatures, 2009). Legislative efforts such as these represent attempts to produce a legal framework that more effectively furthers state interests in protecting minors with respect to digital media while avoiding criminalizing normative adolescent behavior.

### **Summary of Legal Regulation of Children in Societal Contexts**

In many ways, the law regulating adolescents’ transactions in society has, over time, granted adolescents increasing degrees of autonomy and responsibility. This is reflected in Danforth’s allocation of greater responsibility to minors in the laws regulating their contracts. Yet, adolescents’ rights, especially to privacy in matters relating to sex, are subject to far greater infringement under the law than adults’ rights. Lawmakers remain steadfast in their determination to protect minors from exploitation by adults, from moral corruption, and from their own immature judgment. Yet, there are some cases in which the law is evolving to better reflect current sensibilities (and realities) related to adolescent sexuality. Legislative efforts to reduce or remove penalties for underage sex and to craft new laws designed specifically to address sexting and digital bullying exemplify this phenomenon. For many laws, however—particularly those related to

adolescent sex—even when scientific findings and public opinion have deviated from the original rationale for the law, anachronistic statutes remain in place until a particular instance of enforcement sparks public protest and subsequent legal reform.

## **DISCUSSION**

Modern legal standards generally attempt to protect the interests of minors. In most situations, minors are assumed, by default, to lack the maturity necessary to protect their own interests. This responsibility is reserved primarily for the minor’s parents, whose right to raise their children as they see fit is viewed as sacrosanct. Exceptions to the primacy of parental rights include cases involving parental abuse or neglect, the provision of “emancipated minor” status to youth who are effectively independent, the ability of minors to obtain contraception and medical testing or treatment for sexually transmitted diseases without parental approval, and the ability of “mature minors” to be granted medical decision-making authority if judged to be suitably competent by medical personnel.

In family-related legal contexts, unemancipated minors are generally denied independent legal standing, regardless of their level of maturity. In the public school system, similarly, developmental considerations are rarely involved in decisions regarding the appropriate balance of student rights and the interests of the school or the state. In direct interactions with the state, however, the rights of minors are generally commensurate with those of adults, since constitutionally mandated protections are not age-specific. Developmental science does inform legal policy regarding the treatment of minors by the justice system, however, to ensure that such treatment is appropriate for the minor’s cognitive and psychosocial characteristics. This affords minors additional protections during interrogations, influences the age at which they are presumed to be competent to stand trial in an adversarial court setting, and informs judgments regarding their culpability and amenability to treatment. In medical contexts, “mature minor” rules have long been in place to recognize that in many situations, minors exhibit the necessary capabilities to consent to medical treatment without parental approval. Allowances for autonomous medical decisions also extend to minors seeking treatment for conditions about which they might not otherwise confide in their parents, though parental consent (or judicial waiver) requirements have been upheld for abortion. Minors entering into contracts are provided

with additional protections not afforded to adults, to protect them from exploitation, but the extent of such protections has been reduced to avoid abuse of such protections by unscrupulous minors. Minors are shielded from exposure to obscene material. Laws prohibiting sexual contact with minors, intended to prevent abuse at the hands of adults, have also been used to punish minors. Some egregious cases have led to reforms, but many such laws remain in effect. Legislatures in various states have begun to develop statutes to handle “sexting” by minors in a way that differentiates it from dissemination of child pornography.

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## CHAPTER 17

# Children and Government

KENNETH A. DODGE and RON HASKINS

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## INTRODUCTION

In politics, *regulation* is either a dirty word or the savior of the people. In developmental science, regulation has diverse connotations across disciplines, ranging from the neuroscientist's prefrontal cortex-mediated executive control over impulsive behavior, to the social psychologist's social conformity with peers, to the developmental scientist's mother soothing an infant's emotional outbursts, to the economist's taxation of adolescent alcohol consumption. What is common across these diverse examples is the attempt to influence a child's development. Government is one of the major sources of influence on children, directly by affording opportunities (e.g., college loans) and placing constraints on access to socializing factors (e.g., laws

against entering taverns before Age 21) and indirectly by influence on parents (e.g., programs encouraging marriage), schools (e.g., accountability requirements), and other proximal socializing agents (e.g., requiring community programs not to discriminate). This chapter examines the influence that government has on children's development.

Government influences children's development in several ways. Direct funding of programs that affect children (e.g., Head Start, public schools) changes their experience. Laws that constrain or enable persons to act in specific ways (e.g., child abuse laws, school districting) change children's interactions with adults and institutions. Finally, government support for research and demonstrations leads to best practice models that affect children's experience.

Government also asserts its influence through its institutions. International influence on U.S. children is largely symbolic, although it has been crucial in bringing resources and rights to children in developing nations. Domestically, the judiciary is responsible for the protection of children's

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rights and minimal well-being (such as freedom from physical and sexual maltreatment), although it must balance a child's rights with those of others (such as weighing a parent's right to religious exercise with a child's right to access certain medical treatments). The legislative branch is responsible for most laws that provide resources for children, including education, health care, and cash transfers. The legislature operates at federal, state, and local levels through a complicated array of resource allocations and requirements across these levels, depending on the domain. For example, about 90% of education funding comes from state and local taxation, but the federal government imposes requirements on the use of its funds in a way that influences state and local policies. About 45% of Medicaid funding (prior to the Affordable Care Act) for children in low-income families is provided by federal resources but with local options for how those resources are spent. Finally, the executive branch exerts its impact by influencing the public discourse, proposing innovative reforms, and using discretion in administration of programs. The mixture of policies, politics, and resources make up the political economy through which government exerts enormous influence over children's development.

How do academic scholars understand government's influence on children? Even though highly popular ecological models of behavior (e.g., Bronfenbrenner & Morris, 2006) emphasize influences on individual behavioral development that emanate from the society (called the macrosystem), the study of how government regulates children's behavioral development has not occupied a prominent place in the science of child development. However, as Bronfenbrenner (1974) himself noted in his SRCDD Presidential Address, "*basic science needs public policy even more than public policy needs basic science*" (Bronfenbrenner, 1979, p. 8, italics in original). Indeed, this chapter is the first time that this prestigious *Handbook of Child Psychology and Developmental Science* has devoted an entire chapter to the topic. We hope to illustrate the reciprocal relation between developmental science and public policy, in which emerging findings from the science of child development sometimes influence the formulation of policy, and scientific evaluations of government programs and policies lead to evidence-based policy making, and, in turn, the study of the effects of government regulations and policies on children's behavior leads to reformulation of basic theories of child development.

We have four goals for this chapter. First, we familiarize child development scholars with the history, scholarly study, and current status of government policies that

affect children and families. Second, we synthesize the state of knowledge about how specific public policies in domains such as health, education, and social services affect children's development. We ground this synthesis in relational developmental systems theory (Lerner, 2006), which guides this entire volume and series and asserts a bidirectional relation between a child and his or her context, in which the child is influenced by environmental factors but then has an impact on the environment and self-selects or avoids particular environments. Third, we highlight the current challenge of optimizing children's development in a context of economic uncertainty, federal deficit, and an aging population. Finally, we argue that children's development can be optimized through more systematic, evidence-based policy making that is grounded in developmental science.

## THE ROLE OF GOVERNMENT IN CHILDREN'S LIVES

Governments operate at the local, state, federal, and international levels. We devote the majority of this chapter to how government influences children in the United States but acknowledge the need for scholarly study of both international influences on U.S. children and children's policy in other countries. Some attention is given to the United Nations Convention on the Rights of the Child, but space limits constrain us from addressing important international issues and national policy in other countries, such as children in conflict (addressed by Masten, Narayan, Silverman, & Osofsky, Chapter 18, this *Handbook*, this volume). Cross-national comparisons offer important insights for domestic policy, and the study of children across the world is necessary in its own right. Related topics are also addressed in other chapters, such as children and work (Staff, Mont'Alvao, & Mortimer, Chapter 9, this *Handbook*, this volume) and children and the law (Cauffman, Shulman, Bechtold, & Steinberg, Chapter 16, this *Handbook*, this volume).

We start by asserting that governments play two important roles in regulating child behavior: optimizing outcomes for children, and protecting children, families, and society.

### Optimizing Outcomes for Children

Political differences abound regarding the virtue of using government to influence child development, with

the primary counterargument being one of parental prerogative. Nonetheless, a belief in the legitimacy of government-funded programs to support child development is growing over time, especially when scientific evaluations prove the programs achieve positive impacts on children.

### *The Goal of Population Impact*

Whereas most psychologists direct interventions to maximize impact on a specific child, the primary concern of public policy is impact on the population. The latter concern requires assessment of indirect effects of an intervention on nontargeted individuals (called spillover, which could lead to positive, synergistic effects or to adverse effects), benefit-cost ratios, and competing interests of various subgroups, and it affords interventions at the societal level, such as laws, taxes, and regulations. Consider the challenge of placing historically unruly sixth graders into regular or segregated school classrooms. The developmental scientist is concerned with impact on an individual unruly child, whereas the policy scholar, like the school superintendent, tries to maximize total population learning and development. Developmental scientists make a unique contribution in translating basic science into intervention action that affects an individual child, and they intersect with public policy when they address intervention issues such as effects on peers, immediate versus long-term impact of early investments, and how ecological interventions can affect individual children.

Historically, developmental scientists have been focused on the “proof of concept” that a discovery from basic developmental science can be translated into an intervention that is tested through an experiment under optimal conditions to see whether it operates in accord with basic theory. The tradition of scholarly involvement in intervention began in 1747 with the physician James Lind’s use of a nonrandomized control group to test the effect of citrus fruits in preventing scurvy (D. P. Thomas, 1997), was expanded with the biostatistician Fisher’s introduction of randomized trials in the 1920s (Levitt & List, 2009), and was brought to child development in the 1950s through randomized experiments to improve outcomes for poor children (e.g., Gray & Klaus, 1970). Many current government-supported interventions originated through randomized experiments (e.g., attachment-theory-based intervention for high-risk mothers and infants, Bernard et al., 2012; classroom interventions to improve children’s self-regulation, Raver, 2012). Developmental science theory and empirical findings guide intervention design, which is then subjected to

randomized experiments executed under well-controlled conditions. Although psychologists understand that this approach does not address problems in scaling up from the laboratory to the population, they often leave these concerns to other disciplines to resolve.

An important assumption of most developmental science is that the ideal direction of impact moves from basic science to intervention science to field trial to policy, in accord with the traditional role of the scientific community in contributing to government actions, a role that has been articulated by the Institute of Medicine (IOM; Mrazek & Haggerty, 1994) and endorsed by the National Institutes of Health’s (NIH) Roadmap initiative (Zerhouni, 2003). The IOM proposes a four-stage process of policy development that begins with basic scientific research on processes of child development that spark ideas for interventions that could shape a child’s development, such as better prenatal care, a tutoring strategy for learning to read, or social skills training. The second stage is an efficacy trial in which the idea is transformed into an intervention and tested through a randomized controlled trial under ideal conditions to determine whether the intervention can work as hypothesized. Once enough evidence accumulates, the third stage begins with an effectiveness trial (optimally a randomized controlled trial) in which the intervention is tested under typical community conditions. Finally, “successful” effectiveness demonstrations are translated to public policy and scaled up for widespread practice.

Very few examples can be identified in which this process operates smoothly to become widespread practice with positive impact on an entire population (Shonkoff & Bales, 2011). Failures illuminate the challenge. For example, when Brotman et al. (2011) tried to disseminate their successful ParentCorps parent-training program to prekindergarten classrooms, they found that only 31% of the population actually participated due to ineligibility based on language, declination, and other types of attrition. Stormshak et al. (2011) found that implementation of the evidence-based Family Check-Up parenting intervention in middle school settings led to positive impacts on families that elected to receive the intervention but no impact on the 58% of the population that had declined to receive the program, highlighting the problem of low uptake rate. Herrera, Grossman, Kauh, and McMaken (2011) found that when a well-known, evidence-based intervention, Big Brothers Big Sisters School-Based Mentoring, was implemented on a large scale, it had no positive effects after one-and-a-half years, most likely because of loss of fidelity to the original model when scaling up the program.

Quite common in scaling up is the finding that a program has positive impacts on some groups of children but no impact, or even adverse impact, on other groups. Reynolds, Temple, White, Ou, and Robertson (2011) reported that the Child-Parent Center early childhood program has long-term positive impacts on higher-risk families but no impacts on lower-risk families and more positive impacts on boys than girls. An evaluation of Early Head Start (Ayoub, Vallotton, & Mastergeorge, 2011) revealed positive impacts on language development at Age 24 months for girls but not boys, whereas the New Hope antipoverty program (McLoyd, Kaplan, Purtell, & Huston, 2011) was found to have positive impacts on future orientation and employment for boys but not girls. When a program helps one group but not another, policy decisions often become political battles over which group merits greater support.

Another problem in scaling up occurs when systems-level assumptions are not met, such as the problem that occurred when California mandated smaller kindergarten class sizes for all students but could not find enough qualified teachers (Bohrnstedt & Stecher, 1999). The positive benefits of smaller class size were offset by negative effects of being taught by a less-credentialed teacher; the result was that achievement gaps across ethnic and socioeconomic groups grew rather than diminished. The lesson learned is that translating basic science to community scale may yield unanticipated outcomes if systemic considerations are ignored.

The ecological model itself would forecast new challenges at each step of the process of translating basic science to intervention practice. Bronfenbrenner's bioecological theory (2004) placed children's development in a context of widening spheres of influence over development, beginning with proximal influences called the microsystem (e.g., family, classroom). Most psychological interventions are directed toward changing the microsystem to benefit a child. The theory, however, posits that a child's development is equally influenced by the mesosystem (that is, two microsystems in interaction, producing a unique new system), the exosystem (e.g., parental workplace, neighborhood, school district's priorities), and the macrosystem (e.g., culture, political context, state of the economy). A theory of behavioral development that ignores these broader spheres of influence will be inaccurate most of the time, and an intervention based solely on the microsystem may not be effective when implemented in a different system (Bronfenbrenner, 1974). As a result, most interventions cannot be engineered to scale up without

change in penetration, fidelity, and impact. Furthermore, as systems-level analysts find, scaling up an intervention for one group of children has reverberating positive or adverse impacts on other groups of children. The world is not a zero-sum game.

An alternative to the IOM model for intervention program development emerged in the 1960s from the policy world. President Johnson's War on Poverty led to implementation of several social policies and programs at the population level and, thus, evaluation of population impact. The federal Elementary and Secondary Education Act (ESEA) of 1965 included requirements that education programs funded by the federal government be implemented at population levels but also be evaluated, leading to the growth of national nonprofit policy evaluation organizations. Economists in the 1960s generated population-level proposals, such as Milton Friedman's (Friedman & Friedman, 1980) negative income tax. Mathematica Policy Research was established in 1968 to implement one of the nation's first major social research experiments, the New Jersey Negative Income Tax Experiment (Mathematica, 2013). Although the findings continue to be debated and have had mixed impact on policy, the experiment has been praised, and the era of policy evaluation experiments grew over time.

Because much of social policy affecting children has been implemented without an experimental design but in somewhat random ways that simulate random-assignment experiments, naturally-occurring variation in implementation of social policies affords evaluation as quasi-experiments (e.g., variation in drinking-age legislation across states in the 1960s and 1970s; Begun, 1980). A second wave of social policy evaluation emerged in the 1980s with welfare-to-work experiments and continued in the 1990s with the passage of The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) and the opportunity to evaluate changes in the impact of state welfare policies on mothers and children (Blank, 1997; Haskins, 2001). A third wave is emerging now, with President Obama's call for evaluations to "help the Administration determine how to spend taxpayer dollars effectively and efficiently—investing more in what works and less in what does not" (Orszag, 2009).

### *The Goal of Population-Level Child Well-Being*

Americans endow government with the responsibility to improve outcomes for the entire population of children, usually measured as the mean on some indicator of health or well-being, as well as for the populations of subgroups



of children, such as ethnic and income groups. Whereas many interventions designed by developmental scientists are directed toward individual children, the policy interest is in improving outcomes for an entire population (or subpopulation). Well-being indices have been reported by the Child Trends Data Bank (2013), Annie E. Casey Foundation's (2012) state-by-state Kids Count series, and U. S. Census Bureau indices such as the poverty rate.

In 2011, 21.9% of U.S. children under age 18 lived in poverty, according to U.S. Census Bureau (2012b) criteria that set the rate of annual family income (for family size of 4) at less than \$23,050. Children are the poorest group in the nation: The overall poverty rate is 15%, and the poverty rate for persons over Age 65 is just 9%. An index of household food security (Coleman-Jensen, Nord, Andrews, & Carlson, 2012) indicates that 14.9% of households experienced consistent food insecurity throughout 2011 (up from 10.5% in 2000), but the proportion of children who experience food insecurity is somewhat lower, at 11.5%, due to government child nutrition programs that are designed to compensate for low income. The Great Recession had an adverse impact on children (Aber & Chaudry, 2010), further widening the income and well-being gap between children and others, but its impact was partially offset by the nation's safety net programs and the temporary additional benefits provided by the American Recovery and Reinvestment Act of 2009.

Other measures of child population well-being have been pioneered by Land (2012), who developed the Child and Youth Well-Being Index, which uses administrative data to document secular trends in each of seven dimensions of domestic U.S. child well-being: family economic well-being, health, safety/behavioral concerns, educational attainment, community connectedness (participation in schooling or work institutions), social relationships (with family and peers), and emotional/spiritual well-being. Land, Lamb, and Zheng (2011) report that overall child well-being declined sharply between 1980 and 1994, recovered to all-time highs in 2002, but has stalled over the past 10 years. Inspection across domains indicates strong improvements in the safety/behavioral domain (e.g., violent crime and smoking) and community connectedness (e.g., voting and preschool enrollment), but health (especially obesity) and social relationships (single-parent-headed households) have declined by 30% since 1975.

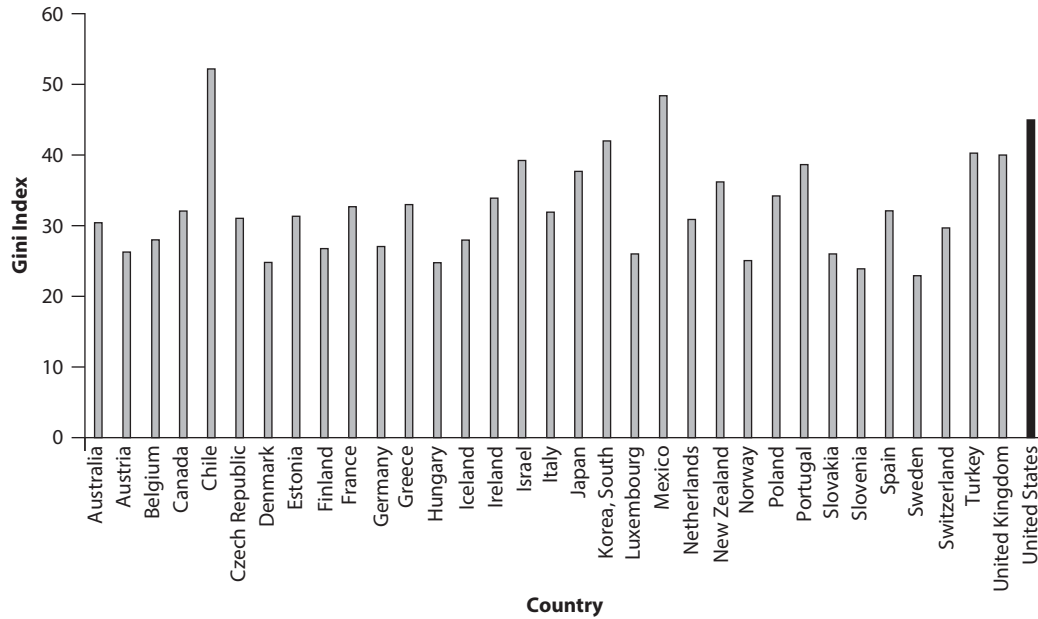
The task of relating secular trends and place-based differences in child well-being to government programs and policies (or other causes) has been led by microeconomists. Developmental scientists have contributed relatively little

to understanding the causes of these secular trends in child well-being, and this gap seems fertile ground for research. A major branch of public policy research is directed toward understanding causal factors in population rates of child well-being and the impact of government policies and programs on these rates.

### *The Goal of an Optimal Distribution of Child Outcomes*

Not only is the mean level of well-being for a population important, the distribution of well-being is also of concern, albeit with major political controversy. Duncan, Magnuson, and Votruba-Drzal (Chapter 14, this *Handbook*, this volume) discuss how poverty and low socioeconomic status are toxic influences on a child's development. In this chapter, we address disparities in income, and later describe programs to support children in low-income families (called means-tested programs). The most common measure of the variation in family economic well-being is the Gini index. This index measures the extent to which the distribution of family income deviates from perfect equality, on a scale of 0 (perfect equality) to 1 (perfect inequality). The Gini index varies wildly across the world, with African nations highest and Scandinavian nations lowest in inequality. According to the Central Intelligence Agency (2013), the Gini index of economic disparity for the United States has increased dramatically since 1980 and now ranks among the highest of any industrialized nation in the world (Figure 17.1). Within the United States, Texas is highest and Maine the lowest in Gini scores.

Whether income inequality has a major impact on children's development (net of absolute income levels) and whether and how governments should seek to redistribute the wealth of its population are controversial topics. Recently, Epstein (2013) asserted in a provocatively titled article, "In Praise of Income Inequality": "You cannot make the poor richer by making the rich poorer." Some economists believe that the best strategy to improve the absolute income of relatively low-income families is to improve the income of high-income families by even greater rates so that they would invest more, which in turn would stimulate the economy and job creation. However, some scholars (e.g., Pickett & Wilkinson, 2009) conclude that income disparity is as pernicious a factor in poor child development as is the absolute level of income. According to this perspective, social comparisons and intergroup conflict lead to stress, crime, and poor health for both low-income and wealthy children. Some observers argue that income disparities are caused by a government-sanctioned economic system (R. J. Gordon



**Figure 17.1** Cross-national comparisons in the Gini Index of Income Inequality.

*Note.* Figures are from the Gini Index of Income Inequality for each of the countries in the Organisation for Economic Co-operation and Development (OECD) for the most recent available year between 2005 and 2011.

*Source:* Adapted from *The World Factbook*, by the Central Intelligence Agency, 2013, <https://www.cia.gov/library/publications/the-world-factbook/index.html>

& Dew-Becker, 2008), and thus government owns the responsibility to offset its adverse consequences.

The correlation between population-level income disparity and poor health is positive and quite robust (Brodish, Massing, & Tyroler, 2000), but the possibility that unmeasured third variables account for this correlation fuels controversy about whether the focus of policy should be to reduce disparities or raise the absolute level of the lowest groups (Eberstadt & Satel, 2004).

### ***The Goal of Positive Outcomes for All Groups of Children***

Beyond the overall population-level mean and variance, group differences in child well-being indices is the third major measure of societal child well-being. Political rhetoric certainly supports the goal of reducing group differences in well-being (or at least in opportunity to reach high well-being), as indicated by efforts to “level the playing field through education for all,” “close achievement gaps,” and provide “equal opportunity” to all groups. How to attend to the needs of children from diverse groups is discussed by McBride Murry, Hill, Witherspoon, Berkel, and Bartz, Chapter 11, this *Handbook*, this volume.

Virtually all measures of child well-being indicate very large disparities across ethnic groups. Rates of poverty

in the United States in 2007 before the recession were 10% for non-Latino/a American Whites, 27% for African Americans, and 27% for Latino/a Americans. After the recession, these rates grew to 13%, 35%, and 33%, respectively, reflecting both an overall increase in poverty and an increase in income disparity (Kaiser Family Foundation, 2013).

In turn, income-group differences in other measures of child well-being are huge, even when controlling for confounding third variables. Poverty is highly associated with increased neonatal and post-neonatal mortality rates, greater risk of injuries resulting from accidents, higher risk of physical abuse and neglect, higher risk for asthma, and lower developmental and school achievement scores on many tests across childhood (Aber, Bennett, Conley, & Li, 1997). For example, only 18% of low-income fourth-grade children score at grade level, in contrast with 48% of other children (Tyrell & Fierro, 2011).

Reardon (2011) has shown that the academic achievement gap, previously thought of in racial terms, has become primarily an income gap: the disparity between Blacks and Whites in academic achievement has actually narrowed since the 1940s, while the achievement disparity between the poor and rich has steadily increased. It is likely that a similar story of declining racial gaps but growing

income gaps is emerging in other domains of health and well-being.

Progressives hold that government policy for children should reduce group disparities in well-being, whereas conservatives would focus policy on equal opportunity, not equal outcomes. Fortunately, there is usually substantial overlap between the policies government might use to achieve either goal. Because income disparities are correlated with so much of well-being outcomes, government policy is often designed to reduce income disparities or to offset the impact of income disparities on children's well-being. Means-tested programs that assume these goals can be evaluated by whether they reduce disparities and improve population-level outcomes.

### Protecting Society, Families, and Children

Even more basic than trying to improve children's long-term outcomes is government's responsibility to protect society, families, and children from harm.

#### *The Goal of Protecting Society From Juvenile Offenders*

Some children harm society through crime. The familiar age-crime curve shows sharp increases in crime across Ages 14 to 17, peaking at 18 (Snyder, 2002). Even though 14- to 17-year-olds represent only about 6% of the population, they are arrested for one fourth of all robbery crimes and 14% of all serious violent crimes. In 2010, 1,642,500 children were arrested for nontraffic crimes in the United States (Office of Juvenile Justice and Delinquency Prevention, 2012). About 30% are female, and over a quarter are under Age 15. Confidential surveys indicate that actual offending is far greater: About 70% of adolescents report engaging in some form of criminal offense (Elliott, Hagan, & McCord, 1998). Developmental scientists have identified two groups of juvenile offenders, those who are life-persistent antisocial offenders whose problem behaviors begin early in life and persist across the life span and those whose antisocial behavior is limited to the adolescent period (Moffitt, 1993; Patterson, Reid, & Dishion, 1992). Declines in crime by each group after age 18 can be attributed to continuing brain maturation and life experiences of marriage, employment, and education (Dodge, Dishion, & Lansford, 2006).

Prior to the 20th century, the popular perspective was that children were not responsible for their behavior until they reached 7 years of age, but that at Age 7 children were equally culpable as adults and were adjudicated in the

adult justice system. As scientific knowledge about children's cognitive development grew, public policy evolved to reflect this knowledge by introducing separate justice systems for juveniles. A National Academy of Sciences report on juvenile justice (National Research Council, 2013) asserts that public policy toward juvenile offenders has evolved in four stages.

In 1899, the first juvenile court opened in Chicago to manage child offenders, for whom it was understood that children's needs differed from those of adults and that the adult justice system accelerated children's criminal behavior. By the late 1920s, virtually all states had a juvenile justice system in place. The policy guiding this Progressive Era (Lindsey & O'Higgins, 1970) assumed that the best way to protect society from children's criminal behavior was to empower a juvenile court to waive a child's judicial rights to a criminal trial and due process and instead to move directly to rehabilitation for as long as necessary. Proportionality of the severity of the crime to time under supervision was not considered. Judges were given broad discretion, which they used in various ways that sometimes were racially biased (Glueck & Glueck, 1968).

Juvenile rehabilitation programs flourished, but major experiments (e.g., Cambridge-Somerville Youth Study; McCord, 1978) revealed that interventions at that time were at best ineffective and at worst iatrogenic (Dishion, McCord, & Poulin, 1999). Criticism of the system came from child advocates on the left who argued that the juvenile court violated children's rights and harmed their development, and from law-and-order critics on the right who claimed that society was not being protected from child criminals (Handler, 1965).

The 1960s brought a second wave of reform, called Due Process, as knowledge grew that children had greater cognitive abilities than had been believed previously and deserved more rights, and following a landmark Supreme Court decision. Fifteen-year-old Gerry Gault, arrested for prank calls, was brought before a juvenile court judge without an attorney or witnesses and was committed to the Arizona State Industrial School for up to 6 years for a crime that would have resulted in a fine of \$50 and a maximum jail term of 12 months if Gault had been an adult. In *In re Gault* (1967), Justice Abe Fortas stated that juveniles experienced "the worst of both worlds" of justice, referring to the capriciousness of juvenile court and the harshness of adult court. The court ruling led to an increase in procedural due process in juvenile delinquency proceedings, including the right to counsel and a privilege against self-incrimination.

The reversal in public policy came about because of a sense that the juvenile court's interventions were not effective (Martinson, 1974). Justice Fortas noted that 66% of adolescents brought before juvenile courts became recidivists. The reforms that ensued following *In re Gault* made juvenile courts more adversarial, but courts retained discretion and tried to balance society's right to protection from children and children's right to a fair hearing.

Shortly after the Gault case had given new protections to juveniles, the nation experienced a dramatic increase in youth violent crime. Crime rates rose steadily across the period 1970 to 2000 for all age groups, but the rise was particularly steep for juvenile offenders in the late 1980s, causing public outcry that an "epidemic" of youth violence was disrupting society and leading to an era of "get tough on crime." Dilulio (1995) and Fox (1996) warned of a rising generation of youthful offenders that they called "super-predators" who could wreak havoc on society if not incarcerated. They suggested that the entire juvenile justice system was obsolete and should be abolished (Feld, 1998). The fundamental concept from developmental science that adolescent offenders differed from adult offenders lost credence (Regnery, 1985), leading to unprecedented changes in federal and state public policy toward juvenile offenders that included easier transfer of juveniles to adult court, longer confinements, and rapid expansion of prison beds (Zimring, 1998). For example, 10-year-olds charged with murder could be charged in adult courts in most states (Griffin, Addie, Adams, & Firestone, 2011).

Policies in public schools also changed during this period. Federal funding for school resource officers (SROs), who are police officers placed in middle schools and high schools to control violent behavior and find guns and illegal drugs, replaced funding for social-emotional learning and related preventive interventions in the Safe and Drug-Free Schools Act. Metal detectors became common in high-risk urban schools, and zero-tolerance policies for bringing weapons on to school property became universal (Skiba, 2000).

The most common public policy in response to juvenile offending became segregation of offenders from the mainstream peer group and placement in groups of peer offenders (Dodge et al., 2006). School policies place behavior-problem children in special education, usually in separate classrooms, or alternative schools populated with offending students who have been expelled from regular school. Schools have also instituted "in-school suspension" policies in which offending students are grouped together and segregated from mainstream peers.

For offending children who have been referred to the mental health system for treatment, group therapy with other offending children is the most common mode of intervention. Children are treated in groups for social skills training, psychotherapy, and counseling (Dodge & Sherril, 2006). Residential placements in wilderness camps, therapeutic boarding schools, and residential treatment centers have proliferated. In the justice system, group placement has always been the most common form of residential setting.

A National Academy of Sciences report (National Research Council & Institute of Medicine, 2001) concluded that the "get tough" and segregation policies were not effective and can have harmful effects on children (Dodge et al., 2006). Dodge and Sherril (2006) estimate that treating antisocial children in groups leads to a one-third decrement in treatment effect size compared with a similar treatment administered individually, and treating them in groups comprised exclusively of other antisocial children leads to an additional one-third decrement in treatment effect size compared with treatment in mixed groups. Dishion et al. (1999) document numerous cases in which the effect of treating antisocial children in groups with antisocial peers leads to significantly adverse impact on the children. They suggest that the processes through which these effects of intervention occur are similar to the well-documented processes through which deviant peer groups exert influence on children in natural settings, that is, through modeling, reinforcement, and "deviancy training."

Since 2000, juvenile justice policy has evolved in a new direction, called a developmental approach, coincident with three other trends. First, the bloodbath upon society that was predicted by Dilulio, Fox, and others never occurred. Juvenile crime rates had started to decline even before "get tough" policies were fully implemented. By 2004, youth crime rates were at a two-decade low, and by 2010 these rates were at historic lows, down 55% from their peak in 1994 (see Figure 17.2; Office of Juvenile Justice and Delinquency Prevention, 2012). In 2010, only one in every 400 children between 10 and 17 years of age was arrested for a violent crime.

Second, escalating state expenditures for juvenile justice have strained state budgets, leading to declining interest in incarceration as primary policy (National Research Council, 2013) and emerging interest in preventive interventions that may prove more cost-beneficial over the long run. Prevention scientists have created and implemented programs for juvenile offenders and high-risk





**Figure 17.2** Secular trends in youth crime rates.

Source: Adapted from *Statistical Briefing Book: Juvenile Arrests*, 2010, 2012, Office of Juvenile Justice and Delinquency Prevention, <http://www.ojjdp.gov/ojstatbb/crime/qa05101.asp?qaDate=2010>

youth, including Multisystemic Therapy (Henggeler, Clingempeel, Brondino, & Pickrel, 2002), Functional Family Therapy (Sexton, 2010), and Fast Track (Conduct Problems Prevention Research Group, 2011), all of which have been shown to reduce arrests and re-arrests of adolescents. The Coalition for Evidence-Based Policy has touted such evidence-based programs as better public policy than programs that are based on political views or seemingly good ideas. As will be described in more detail later in the chapter, Baron and Haskins (2011) have argued that public policy more broadly, and the U.S. Congress in particular, should use cost-effectiveness as a major criterion in guiding public policy for children and families (indeed, policy for all social spending).

Finally, several recent U.S. Supreme Court decisions have indicated a resurgence of support for a developmental perspective that society is best protected when adolescent offenders are treated differently than adults. What is precedent setting about these decisions is that, in each case, the Supreme Court used developmental science findings in rendering its decisions. The first case involved Christopher Simmons, a 17-year-old boy who was convicted of murder and sentenced to death. His attorneys argued that, following from a previous Supreme Court decision that had overturned the death penalty for persons with mental retardation on the grounds that such persons were less culpable due to their disability, an adolescent has an analogous disabling condition by virtue of being an adolescent. Reflecting the growing national sentiment

that development is still in process across the adolescent period, the Supreme Court overturned the death penalty for adolescents (*Roper v. Simmons*, 2005). Justice Kennedy's opinion cited developmental science findings that adolescence is characterized by immature brain development, impulsive and reckless behavior that fails to anticipate consequences of one's actions, vulnerability to negative influences of peers, and malleability of behavior that also enables adolescents to be amenable to intervention. The court noted that the United States had failed to keep up with "evolving standards of decency" and had fallen out of line with the rest of the world, in that only seven countries had executed juveniles in the 15 years prior to the decision.

Five years later, the Supreme Court extended this decision when it struck down mandatory life sentences without parole for nonhomicide offenses by juveniles (*Graham v. Florida*, 2010) and then 2 years later, it struck down mandatory life sentences without parole for homicide offenses by juveniles (*Miller v. Alabama*, 2012). Justice Kagan wrote that the decision was consistent with the court's emerging perspective, based on developmental science, that teenage children lack sufficient brain maturity to act responsibly, are vulnerable to peer pressure, and are responsive to rehabilitation.

In sum, current federal and state policy has evolved to take into account the incomplete developmental status of adolescents who engage in criminal behavior. All but two states (New York and North Carolina) now make provisions that treat offenders under Age 17 in a separate

juvenile court. A National Academy of Sciences report (National Research Council, 2013) supports the emerging perspective that society will be protected from juvenile crime most effectively if several government systems operate in tandem. The report recommended that the education, health, and human service systems should find ways to implement cost-beneficial, evidence-based, preventive interventions across a child's life span, and the juvenile justice system should adopt a developmental approach that recognizes the adolescent's incomplete developmental status by (a) implementing rehabilitative interventions that have been found to be effective through rigorous trials; and (b) holding the offending juvenile accountable for criminal behavior in a way that supports the safety of society while teaching the adolescent responsibility and the concept that consequences are proportional to the severity of the crime.

### ***The Goal of Protecting Parents***

Part of the hesitancy of the U.S. government to intervene with child offenders grows out of a broader philosophical belief in the separation of government and family. Although similar issues are debated in European nations, the United States stands at the extreme in favor of parents' rights (Lonne, Parton, Thomson, & Harries, 2009). Unless a parent's behavior goes beyond standards for abuse or neglect, government has no oversight of parenting and goes to great lengths to protect parents' rights to "own" their child (Wald, 2013).

Government's support of parents' rights has a long history (see *Pierce, Governor of Oregon et al. v. Society of the Sisters of the Holy Names of Jesus and Mary*, 1925) and is seen in numerous laws, court rulings, and the general policy. In all these cases, parents are presumed to be best suited and most inclined to act in the best interests of the child (Buchanan & Brock, 1989). Parents have the right to determine medical care for their child, even if the practices are inconsistent with a physician's recommendations. Courts have ruled that families would not flourish without some autonomy and that the function that families serve in society would be severely diminished if government intervened too readily.

In practice, courts have wrestled with, and often failed to follow, the criterion that a parent's decision must be in the "best interests of the child" by ruling, most of the time, that parents are allowed to make their own decision for the entire family by weighing its benefits and costs using their own idiosyncratic criteria. For example, controversial medical interventions such as cleft palate repair are left up to parents because of their high costs, even though they are

obviously in the best interests of the child (Diekema, 2004). While few persons would argue that the best interests of the child would be served better by funding the child's college education rather than the parents' vacation, parents are not required to choose in favor of college. Diekema (2004) argues that the criterion that is, and should be, used in practice is one of "no harm" in which parents are allowed to act as they wish if their behavior does not exceed a minimal threshold of causing obvious harm to the child. This principal enjoys bipartisan support, and numerous court rulings show that parents are allowed to circumcise an infant, home-school a child, impose religious practice on a minor, and even abort a fetus. Limits on parents' rights have been upheld in cases of presumed obvious harm to the child, such as when the parent has been convicted of murder of a sibling or has severe mental illness.

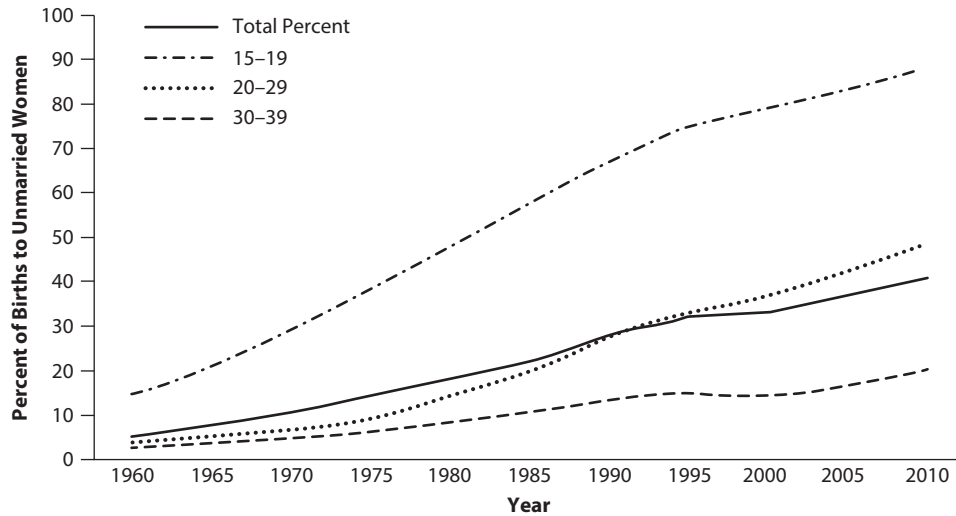
In addition to the criterion of obvious harm to the child (noting the controversy of abortion), courts have limited parents' rights when the welfare of general society comes into question. Courts have ruled that parents must allow their child to be immunized to the extent that not doing so imposes a public health risk, but parents are allowed to make their own immunization decisions when public health outcomes are less clear.

Just as contentious as parental rights is the policy question of how actively government should support parenting as an important function for the overall welfare of society. Depending on one's perspective, policies have gone too far or not far enough to support parents. A variety of means-tested programs support parents, especially young, unmarried parents.

### ***The Goal of Protecting Family Formation***

The most dramatic secular trend in family formation over the past 50 years has been the decline of marriage and the increase in the proportion of births to single parents. The importance of this trend to public policy is that children born to single mothers, compared with children born to married parents, are at elevated risk for living in poverty, experiencing mental health problems, failing to graduate from high school, being unemployed, and receiving government assistance throughout their lives (Amato, 2005; Carlson & Corcoran, 2001; McLanahan & Sandefur, 1997; A. Thomas & Sawhill, 2005).

In spite of a 56% decline in the rate of births to teenage women (from 89 per 1,000 in 1960 to 39 per 1,000 in 2009), the percentage of births that occur outside marriage has risen from 5% in 1960 to 41% in 2009 (see Figure 17.3; National Center for Health Statistics, 2010). The sharpest



**Figure 17.3** Secular trends in births outside of marriage, by age group.

Source: Adapted from *Births to Unmarried Women* (Appendix 1), by Child Trends Data Bank, 2013, <http://www.childtrends.org/?indicators=births-to-unmarried-women>. Data from National Center for Health Statistics, National Vital Statistics System. Demographic characteristics of mother. Available at <http://205.207.175.93/VitalStats/ReportFolders/ReportFolders.aspx>

rise occurred between 2002 and 2008. For the first time, over half of all births to women under Age 30 occur outside of marriage.

Although this phenomenon is still highly related to education (e.g., 51% of births to women with no college education occur outside of marriage in contrast with 8% for college graduates), the trend is rising among all demographic groups and is particularly noticeable among non-Hispanic White women, for whom the percentage of births outside marriage has tripled from 9.6% in 1980 to 29.1% in 2010, and Hispanic women, for whom the percentage has risen from 23.6% in 1980 to 53.4% in 2010. For Black women, the percentage has risen from 57.3% in 1980 to 72.8% in 2010. At the same time, nonmarital births are increasingly likely to occur in a cohabiting parental union, up from 40% in 2002 to 58% in 2010. Children born into cohabiting circumstances are still at risk for poor outcomes, but less so than in noncohabiting circumstances (A. Thomas & Sawhill, 2005).

Across developed countries, the percentage of nonmarital births varies widely, from 2% in Japan to 66% in Iceland (and similarly high rates in most northern European countries), with the U.S. rate in the middle but having one of the sharpest increases (Organisation for Economic Co-operation and Development, 2012). A particular pattern for the United States is the increasing rate of births to women who are cohabiting. In Europe, many unmarried parents cohabit, but the stability of cohabiting in Europe is greater than in the United States (Ventura, 2009).

Single-parent, noncohabiting families have high poverty rates and, compared with children from married-couple families, their children have high rates of school failure, juvenile delinquency, and other problems (McLanahan & Sandefur, 1997). Cohabiting parents also have higher poverty rates than married parents. Many researchers and politicians argue that public policy should attempt to reduce the number of nonmarital births, which would in turn reduce the child poverty rate. Federal policy both supports single parents and aims to reduce nonmarital births. The 1996 Welfare Reform Law, for example, aimed to promote marriage, reduce out-of-marriage childbearing, and strengthen two-parent families, while simultaneously providing cash welfare and work support benefits to single parents.

Increasing marriage rates would be likely to both reduce nonmarital birth rates and reduce child poverty. A recent simulation study using data from the Current Population Survey by Sawhill and Karpilow (2013), for example, shows that if single mothers in the bottom third of the income distribution married men from the bottom third matched on race, age, and educational attainment, the average household earnings of these low-income single mothers and their children would increase by over 30%.

A major policy question about families is whether it is possible to increase marriage rates. A review of marriage education programs by the Urban Institute showed that on average they produced substantial impacts on relationship satisfaction (average effect size = .68) and couple

communication (average effect size = .26), although impacts on marriage rates were not significant. But this review was limited because it was based on only 39 studies, many of which were not fully reported, and even more importantly, because none of the studies involved low-income couples. Moreover, the studies did not report long-term impacts on marital stability or on children's development or behavior. Nonetheless, as the authors concluded, "The review . . . indicates that evaluations of marriage programs show significant positive effects on average" (Reardon-Anderson, Stagner, Macomber, & Murray, 2005, p. 23).

In 2002, the Bush administration launched a comprehensive initiative with programs designed to encourage healthy marriages (Haskins, *in press*). Here we focus on the two Bush programs with the strongest evaluations. The first program, called Building Strong Families (BSF), aimed to strengthen the relationships and parenting of young couples who had had a baby together outside marriage. It was implemented in eight sites with 5,100 couples randomly assigned to an experimental group or a control group. Parents in the experimental group were offered marriage education classes in groups using a formal curriculum as well as advice and counseling from a family-services coordinator who also provided referrals for services.

An evaluation of BSF by Mathematica Policy Research (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010) showed that at 15 months the BSF program did not affect whether the couples stayed together or got married, and there were very few effects on relationship quality or parenting in six of the eight sites. However, the Oklahoma City program produced a pattern of positive impacts, while the Baltimore program produced some negative impacts, particularly physical assault by the fathers. The positive impacts in Oklahoma included relationship happiness, support and affection, use of constructive behaviors to resolve conflicts, avoidance of destructive conflict behaviors, marital fidelity, quality of coparenting, father living with the child, and father providing substantial financial support. However, a follow-up evaluation at 36 months (Wood, Moore, Clarkwest, Killewald, & Monahan, 2012) found virtually no significant impacts across sites with two exceptions. The Florida program had negative impacts on relationship status and quality, father involvement, and family stability. Although most of the previously positive impacts of the Oklahoma programs had disappeared by 36 months, program children were about 20% more likely to be living with both their parents than controls.

The second well-evaluated Bush marriage initiative was the Supporting Healthy Marriage (SHM) program. SHM is similar to the BSF program in that it attempts to increase the relationship skills of couples, but in this case married rather than unmarried couples. It was implemented at eight sites through random assignment of couples. Couples in the program group were then provided with structured group workshops, supplemental activities to build on workshop themes, and family support services to address participation barriers, connect families with other services, and reinforce curricular themes. MDRC reported the impacts on couples after 12 months as follows: "Approximately 12 months after study entry, program group members reported higher levels of marital happiness, lower levels of marital distress, greater warmth and support, more positive communication, and fewer negative behaviors and emotions in their interactions with their spouses, relative to control group members" (Hsueh et al., 2012, pp. ES-4–ES-6).

Although these results are more positive than results produced by the BSF program, none of the sites produced significant impacts on lowering rates of marital dissolution. Both the BSF and SHM programs cost about \$10,000 per couple. When the modest impacts of the BSF program are compared with this cost, many observers conclude that the program needs to increase its impacts, reduce its cost, or both. Some researchers and policymakers have concluded that the programs should be abandoned.

In summary, the results from the Oklahoma program at 15 months are encouraging, but most effects had faded by 36 months. For SHM, the early results are more encouraging than for BSF, but there is no evidence that the program had an impact on marriages lasting longer, which along with impacts on children are the most important goals of the Bush marriage programs.

Rather than focusing on marriage, President Obama has placed a priority on reducing teen pregnancy and has initiated a program called Teen Pregnancy Prevention to provide \$100 million per year in competitive grant funds to scale up programs with rigorous evidence of success. This program joins a host of other federal programs that provide funds to promote abstinence education and birth control. The field of teen pregnancy prevention is well developed and according to the Department of Health and Human Services there are 28 well-evaluated model programs that have a significant impact on some aspect of teen sexual behavior, including at least five that found reductions in pregnancy rates ([http://www.hhs.gov/ash/oah/oah-initiatives/teen\\_pregnancy/db/tpp-searchable.html](http://www.hhs.gov/ash/oah/oah-initiatives/teen_pregnancy/db/tpp-searchable.html)). There is also evidence that increased Medicaid coverage of birth



control reduces pregnancy rates in older women and modest evidence that media campaigns that encourage use of condoms by males also reduce pregnancy rates (Kearney & Levine, 2009; A. Thomas, 2012).

A major federal attempt to help families with children was passage of the Family Medical Leave Act (FMLA) of 1993. This legislation is a landmark measure that requires employers to grant employees up to 12 weeks of job-protected unpaid leave to tend to a newborn infant (or other urgent family health matters). By 2005, approximately 10 million workers were taking advantage of this provision annually. Although it is difficult to evaluate its impact because of the lack of randomized experiments, a survey conducted by Abt Associates (Klerman, Dailey, & Pozniak, 2012) indicates that employees selectively use this provision with great satisfaction and that most employers report little negative impact on the workplace. An important limitation of FMLA is that it exempts employers with fewer than 50 employees.

### *The Goal of Protecting Children*

Beyond protecting society and parents, government policy has increasingly sought to protect children from harm. We identify three principles that guide this policy and then summarize the history of child protective services in the United States.

The limit on parental authority is the doctrine of *parens patriae* that the state may act as a surrogate parent in extreme cases when not intervening would certainly cause life-threatening harm to the child (known as the “harm principle”). Long ago, the Supreme Court ruled, “Neither religion nor rights of parenthood are beyond limitation. Acting to guard the general interest in youth’s well-being, the state as *parens patriae* may restrict the parent’s control by requiring school attendance, regulating or prohibiting the child’s labor, and in many other ways” (*Prince v. Massachusetts*, 1944).

The principle of protecting “the best interests of the child” goes beyond the harm principle by asserting that government should intervene on behalf of a child, even a child who does not face imminent harm, in order to produce outcomes that are best for the child. Determining the child’s best interests, however, is more of a subjective judgment than determining harm. Nonetheless, this principle is the basis for public policies that aim to improve children’s outcomes such as compulsory schooling and required immunization.

A third principle that guides many government programs is that of equal opportunity. Policy makers have prioritized programs that seek to compensate children who

are at disadvantage through no fault of their own, such as being born with a disability, born into poverty, or suffering from discrimination. The goal is to “level the playing field” for all children, even if everyone’s best interests cannot be served. This principle is the basis for a wide variety of government policies and programs, including child tax credits, Head Start, Temporary Assistance for Needy Families, school nutrition program, Pell Grants, and other means-tested programs.

The history of child protection began in the late 1800s with enactment of child labor laws and associated compulsory school attendance policies that ensured that children were not being subjected to work for parental gain (Myers, 2004). In 1875, the world’s first child-protection organization opened, the New York Society for the Prevention of Cruelty to Children. The field of social work grew at the same time in response to the need for professionals to protect children. The first home to care for harmed children was Toynbee Hall, established in London, England, in 1884, followed by Hull House in Chicago, founded by Jane Addams in 1889.

Juvenile courts initiated at the turn of the 20th century ensured children’s protection from the adult justice system and intervened in cases of overt physical abuse and orphaning of children, requiring the state to assume custody. The assumption was made that parents sometimes failed to keep their children from harm (for whatever reason, from the parent’s death to gross misconduct), leading children to be orphaned, abused, or delinquent, and so these children were treated in a separate court (Lindsey & Borough, 1931).

It was not until 1962 that the problem of child abuse was publicly recognized, when Henry Kempe coined the term “battered child syndrome” to refer to a child who presented at a pediatrician’s office with clinical symptoms of bruises, malnutrition, or extreme anxiety. By 1967, all states had passed laws requiring professionals to report suspicions of abuse to police and welfare offices, and by 1974, 60,000 cases were reported annually. That figure grew to 1 million in 1980, 2 million in 1990, and 3 million in 2000. The figure has dropped sharply in the past decade, although the reasons are unclear.

Estimates of the rate at which children are physically or sexually harmed or neglected vary according to the source of information. Approximately 6.2 million children (about 8% of all children) were reported to Child Protective Services (CPS) in 2011, but about half of these reports were dismissed immediately as noncredible. Of the 3.4 million reported cases that were officially investigated, 676,569 were substantiated, or 0.9% of the child population (USDHHS, 2012). The other 2.7 million were

called “unsubstantiated,” but a high portion of the unsubstantiated cases is still at risk for poor outcomes (Cross & Casanueva, 2009). About 78% of the substantiated cases (.7% of the child population) suffered neglect, 18% (.2% of the child population) suffered physical abuse, and 9% (.1% of the child population) suffered sexual abuse (sum is > 100% due to multiple counts). More than 1,500 children died from abuse in 2011, with 82% of these cases younger than 4 years of age, and 78% of the deaths caused by a parent (USDHHS, 2012).

Of course, officially reported cases do not exhaust the number of children who are actually maltreated. The National Incidence Study (NIS) is a Congress-mandated study to generate more accurate figures by soliciting information from community professionals regarding maltreatment cases that were never reported to CPS. The NIS estimates are about 50% higher than official reports. A much higher proportion of children in a cohort will be reported to a CPS agency at least once before they grow up. Putnam-Hornstein, Webster, Needell, and Magruder (2011) found that 14% of all children born in California between 1999 and 2002 were reported as maltreated (either abused or neglected), and 5% were substantiated as maltreated by Age 5. Wald (2013) extrapolates from these figures to estimate that approximately 8 to 10% of all children in California will be substantiated as maltreated by the time they reach Age 18, and at least 15% of the population of children will actually experience maltreatment. He estimates that in addition to the 15% who experience parenting that legally constitutes maltreatment, another 5% of children receive highly inadequate parenting due to poverty, parental alcoholism, or parental depression.

Children are at greatest risk for being maltreated when they are young (Child Trends Data Bank, 2012). Children from low-income families are at much higher risk: About 35% of White and African American children in low-income families will be reported to CPS at some time before reaching Age 18 (Sabol, Colton, & Polousky, 2004).

Because CPS statistics likely underrepresent actual maltreatment and are subject to biases in reporting patterns, yet another source of information about maltreatment comes from anonymous telephone interviews. Theodore et al. (2005) used computer-assisted random-digit dialing in North and South Carolina to interview 1,435 mothers of children Ages 0 to 17 anonymously to determine incidence rates for physical abuse (4.3% of the population under age 18) that were 40 times greater than official CPS substantiation rates for physical abuse (0.1%) and 15 times greater for sexual abuse (1.1% of the population under

Age 18, compared with 0.1% from CPS rates) within the past year. Straus and Stewart (1999) used parent surveys to report that physical discipline of children is normative, with peak experience at age 4: More than 90% of preschool-age children are corporally punished in the past year, compared with 34% of infants less than 12 months of age and 25% of 16-year-olds.

Child maltreatment rates vary widely worldwide, but because of varying laws and practices for estimating rates, no official statistics on global child maltreatment are available. Confidential surveys of parents indicate that more than half of children worldwide experience physical punishment. In a study of 1,400 mothers in nine countries (China, Colombia, Italy, Jordan, Kenya, Philippines, Sweden, Thailand, and the United States), Lansford et al. (2010) found that 56% of all children had experienced mild corporal punishment, and 14% had experienced severe corporal punishment, in the past month. Country differences were large, with lowest rates in Sweden (7% mildly and less than 1% severely punished) and highest in Kenya (90% mildly and 62% severely punished). U.S. rates were in the middle of the range (37% mildly and 5% severely punished in the past month). Runyan et al. (2010) found similar rates and variation in surveys conducted in multiple countries, including the United States. Straus (2010) reviewed many studies of children in 32 countries and found that, overall, 53% of adults self-reported that they had been “spanked or hit a lot” before age 12, with countries varying from a low of 17% in the Netherlands and Sweden to a high of over 70% in Taiwan and Tanzania. Straus also reported a pattern of higher use of corporal punishment in less economically-developed countries.

Legal prohibition against corporal punishment of a child varies widely across the world. Since Sweden became the first country to pass laws to protect children from all corporal punishment in 1979, 32 other countries have passed similar laws. The momentum for a worldwide ban on corporal punishment is increasing, with 17 countries passing laws since 2007.

One challenge for policy makers and the law is to develop a coherent operational definition of child maltreatment. All 50 states permit the use of “reasonable corporal punishment,” with *reasonable* being a legal term of art to indicate acceptable under the law (Coleman, Dodge, & Campbell, 2010). Definitions and practices vary wildly across states, however. Although the U.S. rate of substantiated maltreatment in 2010 was 12.4 per 1,000 population, several states (Massachusetts, Alaska, District of Columbia, and Iowa) had rates that exceeded twice

that rate, with Massachusetts having the highest rate at 31.7 per 1,000. In contrast, Pennsylvania's rate of 1.2 per 1,000 was only one tenth of the national average. These differences cannot be accounted for by ethnicity or income but must, instead, reflect differences in laws defining maltreatment, clinical practice, and culturally based norms for reporting.

Coleman (2007) observed that judges have great discretion in defining maltreatment and often use the "know it when you see it" test, similar to the test they use to define pornography. State laws themselves vary in specificity of definition, and many defer to parents' privileges of discipline under states' common law, which provides that a "parent is privileged to apply such reasonable force or to impose such reasonable confinement upon his child as he reasonably believes to be necessary for its proper control, training, or education" (Coleman et al., 2010). The intentionally vague term *reasonable* refers to normativeness for the population.

The case for excluding normative behaviors from prosecution as maltreatment has an empirical basis. Lansford et al. (2005) found that the effects of mild corporal punishment vary according to cultural normative practices. That is, in cultures in which this practice is normative, its negative impact on a child's anxiety and aggression levels was minimal, whereas this same practice when exhibited in a culture where it is less normative is interpreted by the child as hostile (according to child interviews) and indeed causes emotional harm to the child.

A problem with sole reliance on "normativeness" of parental behavior, however, is that it ignores actual harm to the child. Some historically-common punishments (e.g., shaking a baby and striking a child with an object) might inflict permanent harm to a child. Furthermore, harm might be immediate or deferred, and it might be physical injury or long-term emotional damage. Coleman et al. (2010) suggest defining child harm based on empirical studies in developmental science that establish typical effects of a parental behavior. They cite the case of shaken baby syndrome. After the once-common practice of shaking an infant to calm her was determined empirically sometimes to cause lasting brain damage, laws and judicial practice changed to incorporate shaking an infant as maltreatment. Because the long-term impact in a particular case is not known immediately, they suggest using past empirical findings as the defining criterion in a current case. They go on to propose a new definition of maltreatment that includes parental behavior that causes or risks causing "functional impairment," which means

"short- or long-term or permanent impairment of physical or emotional functioning in tasks of daily living" (Coleman et al., 2010, p. 163).

Prior to the battered child syndrome discovery, government played only a small role in child protection. The founding of the Children's Bureau in 1912 and the establishment of Social Security in 1935 provided some resources, but maltreatment was largely ignored by states and local governments. Racial biases went unchecked: as many as 25% of Native American children were removed from their parents for alleged maltreatment until the Child Welfare Act of 1978. The Child Abuse Prevention and Treatment Act (CAPTA) of 1974 authorized federal funds to respond to reported abuse cases, growing the Child Protective Services (CPS) system which now includes both a forensic function to investigate individual cases to determine whether illegal maltreatment occurred and a clinical function to provide intervention services to minimize ultimate harm to the child and/or improve family functioning if the child remains at home. The average efficacy of these services has been doubted by a recent National Academy of Sciences committee report (National Research Council, 2013).

In 1980, the federal government passed major legislation augmenting two programs in the Social Security Act (in Title IV-B and Title IV-E) to help states pay for a range of prevention, treatment, or child maintenance services for abused or neglected children. Title IV-B, which has several parts, provides states with about \$750 million in funds annually and allows them substantial flexibility in creating programs to help at risk families avoid abuse and neglect. Title IV-E provides states with nearly \$7 billion per year to support training, administration, and maintenance costs for children who need foster care or other out-of-home placements and to families that have adopted children from foster care. Funds from Title IV-E can be used only for children from low-income families (about half the children in foster care). The federal government also invests tens of millions of dollars in research on the causes of maltreatment and on testing treatments to reduce maltreatment or mitigate its effects.

Some experts argue for greater funding for CPS agencies to intervene in cases of alleged or substantiated maltreatment (e.g., Bartholet, 2012; Dwyer, 2008), whereas others argue against this view on the grounds that CPS intervention is not helpful at best and exacerbates harm at worst (e.g., Bergman, 2010; Wald, 2013). Some scholars even argue that mandatory reporting laws themselves are harmful and should be repealed to reduce reliance on the

CPS system (e.g., Drake & Jonson-Reid, 2007; Worley & Melton, 2013). The most recent reform in the CPS system is the introduction of a differential response that separates the primary functions of forensic investigation and clinical intervention (Waldfoegel, 2009). In differential response, reported cases are bifurcated into those that require a forensic investigation (and potential prosecution) and those that merit immediate provision of “voluntary” clinical services (Child Welfare Information Gateway, 2008; Conley, 2007). The focus of the clinical track is to assist families in addressing issues that impact child safety with the goal of avoiding more serious maltreatment and future interaction with CPS.

Evaluation of differential response systems has focused on child safety and outcomes. Loman and Siegal (2004a) used a matched-community design to compare 14 counties implementing Missouri’s version of differential response with 14 matched control counties. They found that the new system did not compromise child safety and enhanced service delivery, increased family cooperation and satisfaction, was viewed by social workers as a more effective approach, and lowered rates of recidivism in maltreatment. After 5 years, Loman and Siegal (2004a) found that recidivism remained lower in counties implementing the reform, although they also found that reform counties had higher rates of subsequent out-of-home placements.

Loman and Siegal (2004b) also conducted a randomized controlled trial of Minnesota’s differential response system and found that families assigned to differential response were less likely to have subsequent maltreatment reports and had fewer out-of-home placements than the control group. A cost study showed that total costs for case management activities and other services were less for differential response cases than control cases.

Shusterman, Hollinshead, Fluke, and Yuan (2005) compared 140,000 children in six states who were referred to a differential response system with 174,000 children who received traditional investigations and found that recidivism rates for differential response cases did not differ from the rates for traditional investigation cases in any state except Oklahoma, where the recidivism rate was decreased. The underlying assumption of differential response is that if CPS identifies family needs, effective community services to address these needs will be readily available (Zielewski, Macomber, Bess, & Murray, 2006). Wald (2013) concludes that this assumption is rarely met. He calls for the creation of a comprehensive system of services that ensures protection from harm and promotes healthy development.

### International Policies to Protect Children, Families, and Society

Article 37 of the United Nations Convention on the Rights of the Child was passed in September of 1990 and has since been ratified by 193 nations. The Convention requires that states act in the best interests of the child (beyond minimal protection from harm). It asserts that children have basic rights, including the right to life, the right to legal representation, the right to independent opinion and religion, and the right to privacy. It forbids all forms of corporal punishment and other degrading practices, as well as capital punishment for children. Later optional provisions were added to prohibit children from involuntarily serving in combat and the trafficking of children for labor, prostitution, or pornography.

Three countries have not ratified this UN convention. Somalia is in the process of deliberating its ratification. South Sudan, as the newest member of the United Nations, has made internal steps toward ratification. In contrast, the United States has not ratified the convention because of opposing philosophical beliefs about parental rights and resistance to external control over internal matters. Although the United States has not ratified this convention, the Supreme Court in *Roper v. Simmons* noted that the United States was in a world minority on capital punishment of children, and the court’s overturning of this practice has been viewed as an implicit endorsement of the convention. The convention has come to symbolize even broader issues: For opponents, it symbolizes the hypocrisy of nations that would sign a document but not follow it and the presumption of the United Nations to dictate to sovereign nations, whereas for child advocates it signifies the recognition of children as full human beings. The Obama administration has voiced endorsement of the convention’s ratification, but strong opposition in Congress makes it unlikely that it will be ratified by the United States in the near future.

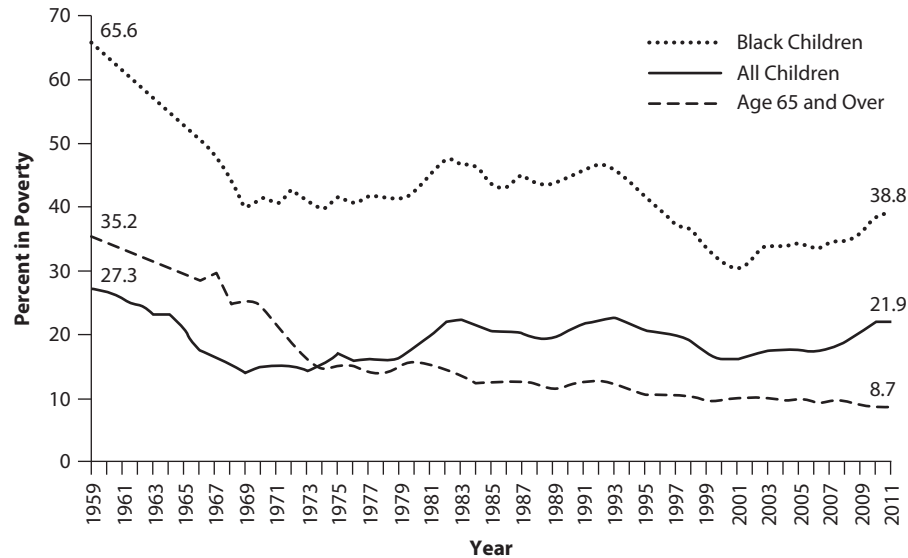
## THE PROBLEM OF POVERTY AND INEQUALITY

Few factors exert a more enduring and far-reaching impact on children’s development than growing up in poverty. Likewise, no issue has consumed government policy toward children to a greater extent than combating poverty.

### Trends in Poverty

Figure 17.4 shows the trends in poverty between 1959 (when the U.S. Census Bureau began calculating poverty





**Figure 17.4** Secular trends in poverty for selected groups.

Source: Adapted from *Current Population Survey, Annual Social and Economic Supplements* (Table 3: Poverty Status of People by Age, Race, and Hispanic Origin: 1959 to 2011), from U.S. Census Bureau, 2012. Available at <http://www.census.gov/hhes/www/poverty/data/historical/hstpov3.xls>

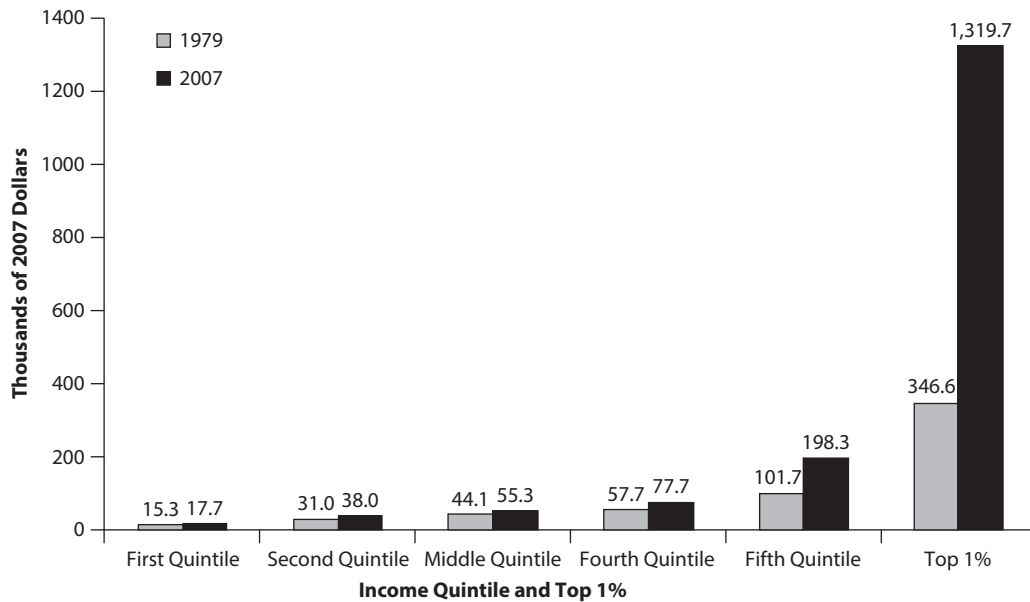
rates) and 2011 for all children, Black children, and the elderly. The poverty rates for all children and Black children declined sharply between 1959 and 1969, and then progress stalled. Poverty began to increase for both groups in the late 1970s, and then declined again in the 1990s, until starting a sustained increase beginning with the recession of 2001, and then increased dramatically after the onset of the Great Recession in 2007. By 2011, the poverty rates among all children and Black children were about where they had been four decades earlier.

The nation has had much better success in reducing poverty among the elderly. Like child poverty, elderly poverty declined substantially after 1959. However, unlike child poverty, elderly poverty has either held steady or declined in almost every year since the mid-1960s. Studies show convincingly that the major cause of this decline is Social Security (Engelhardt & Gruber, 2004). Because Social Security is unaffected by recessions, poverty among the elderly remains low even when poverty rates among working-age adults and children are increasing during recessions. The poorest demographic group in America, by far, is children.

As progress against child poverty has stalled, inequality in the United States has grown substantially, with the greatest disparities present at birth. Figure 17.5 shows the income distribution in 1979 and 2007 divided into quintiles. Income is expressed in thousands of inflation-adjusted 2007 dollars. Several points about changes in the distribution

of income are clarified by this figure, which is based on a report published by the nonpartisan Congressional Budget Office (2011). First, the disparity in income increased substantially between 1979 and 2007 and became progressively greater from the lowest to the highest income quintile. People in the bottom, middle, and top quintiles, for example, experienced income increases of 16%, 25%, and 95%, respectively. The top 1% of earners is also shown in Figure 17.5. Their income increased by more than 280% over the period. Thus, the further up the income distribution one goes, the greater the increase in income between 1979 and 2007. The obvious conclusion is that income inequality increased between the two dates, in large part because the top of the distribution separated itself from the rest.

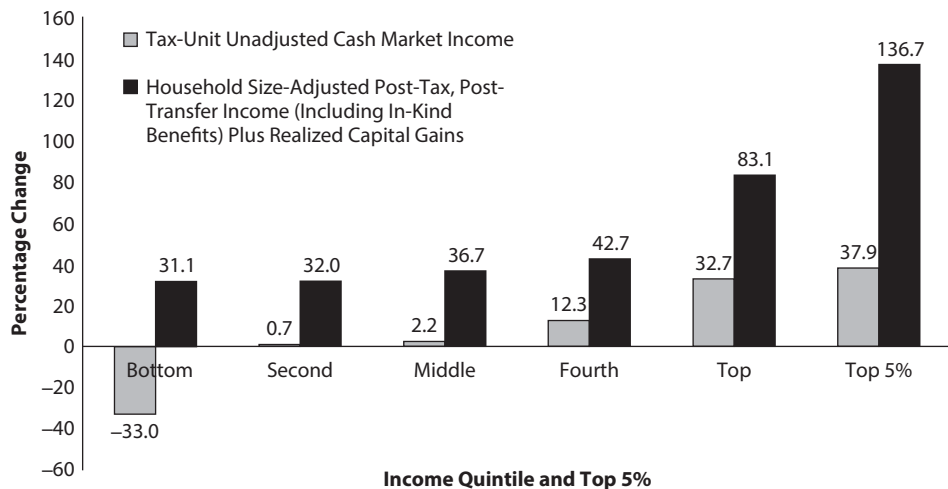
Two questions are especially pertinent to our exploration of income, poverty, and inequality: How did the absolute income level for the poorest quintile change over this 30-year period, and what impact did government policy have on this distribution? The definition of income used in Figure 17.5 reflects the impact of both government taxes and transfer payments, which taken together tend to increase income at the bottom of the distribution and reduce it at the top. Inequality based on only market income was much greater in both 1979 and 2007 than income after government taxes and transfers. Figure 17.6 shows the importance of this distinction in understanding the growth of inequality. As in Figure 17.5, Figure 17.6



**Figure 17.5** Income change by quintiles, 1979 to 2007.

*Note.* Comprehensive household income equals cash income plus income from other sources, including in-kind benefits.

*Source:* Adapted from *Trends in the Distribution of Household Income Between 1979 and 2007: Average After-Tax Household Income*, Congressional Budget Office, 2011, Washington, DC: Government Printing Office. Available at [http://www.cbo.gov/sites/default/files/cbofiles/attachments/average\\_after-tax\\_income.pdf](http://www.cbo.gov/sites/default/files/cbofiles/attachments/average_after-tax_income.pdf)



**Figure 17.6** Income change between 1979 and 2007 under two definitions.

*Source:* Adapted from “Deconstructing Income and Income Inequality Measures: A Crosswalk from Market Income to Comprehensive Income (Table 1),” by P. Armour, R. V. Burkhauser, and J. Larimore, 2013, *American Economic Review*, 103(3), pp. 173–177.

shows changes in income between 1979 and 2007, but this time two definitions of income are used. The first bar graph in each quintile is cash market income before any government taxes or transfers are considered. Data of this type were developed by Piketty and Saez (2003), and are often cited to claim that income in the bottom quintile fell over the period. However, another picture of changes in income over time is presented by data for households,

adjusted for size, taking account of government taxes and transfers as well as income from realized capital gains (the second bar graph in each set in Figure 17.6). Based on market income, a reasonable conclusion is that tax unit data show a major decline in the bottom quintile and almost imperceptible growth in the second and middle quintiles. However, based on household data and a broader definition of income, all three of the lowest quintiles experienced

income growth of over 30% between 1979 and 2007. The most important factor in increasing income within the bottom three quintiles is the progressive government tax and transfer system, which partially reduces income inequality.

### Increasing Disparity in Income and Wealth

Figure 17.6 also shows the huge growth of household income among those in the upper reaches of the income distribution. As shown by the two bar graphs for both the top quintile and the top 5%, the growth of income using the broader income measure is huge. A recent report from the nonpartisan Congressional Research Service concludes that the major cause of the explosion of income at the top is income from capital. In addition, the more lenient treatment of capital income under the Bush tax cuts of 2001 and 2003 played an important role in the remarkable rise of income at the top (Hungerford, 2013). Some analyses show that the growth of inequality of wealth is even greater than growth of inequality of income. For example, Darity and Nicholson (2005) found that class-based disparity in capital gains and family wealth dwarfs income disparity and separates poor from nonpoor families and Black from White families in America. The top 1% of wealth holders own 60% of all the nation's assets, and the top 10% own 85% of all assets (Darity & Nicholson, 2005). Data from the Survey of Income and Program Participation indicate that the median wealth of White families in 2009 was \$113,149, compared with \$6,325 for Latino/a American families and \$5,677 for Black families (Kochhar, Fry, & Taylor, 2011). The wealth gap means that poor and minority families have fewer resources to make long-term investments in their children (from piano lessons to neighborhood school choices) that could help them escape or avoid poverty in the next generation.

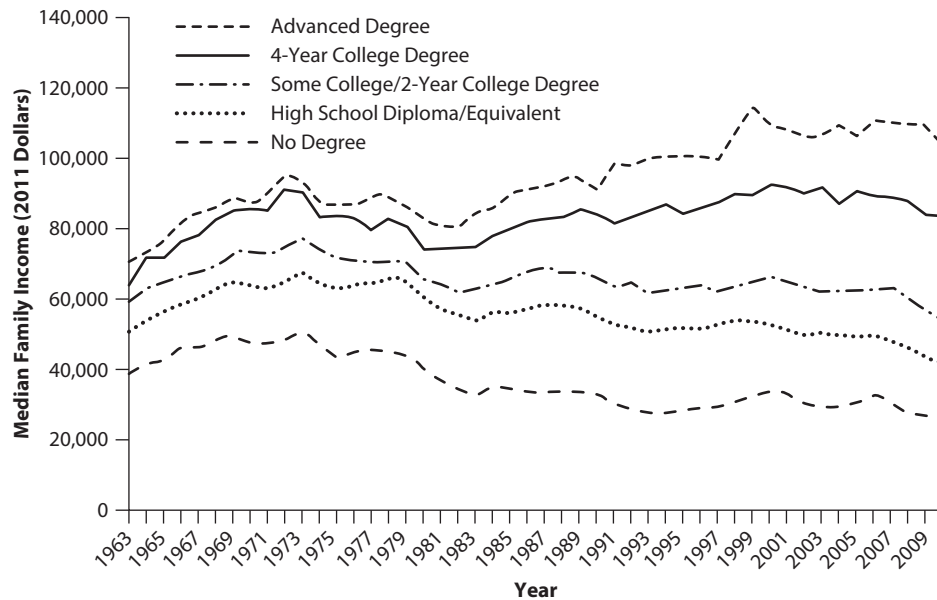
Regardless of how one interprets the various definitions of income and wealth, it is notable that under every definition, income and wealth inequality increased dramatically between 1979 and 2007. There are a host of reasons that explain the increased inequality as well as the lack of progress against poverty shown previously in Figure 17.4. All of the underlying forces we review below have contributed to both the stubbornly high poverty rates and high and growing income inequality. One important factor is wages at the bottom of the income distribution. After some modest rises and declines, wages at the 10th percentile are almost exactly where they were in 1979. Over the same period, wages in the middle increased by

about 8%, while wages at the 95th percentile increased 36% (Mishel, Bivens, Gould, & Shierholz, 2012). These differential wage increases, of course, contributed to increasing inequality. The unfortunate trend in wages at the bottom of the distribution plays a major role in the difficulty the nation has encountered in reducing poverty.

A second major factor in both high poverty rates and growing income inequality is the lack of progress in increasing the educational achievement of American children whose parents are poor or near-poor. Figure 17.7 provides an overview of trends in family income during the prime earning years by level of education of the family head. Three trends are notable in the figure. First, over the nearly five-decade period between 1963 and 2011, the line graphs representing the relation between family income and education level of the household head never cross. In short, more education has consistently meant more income. Second, in recent years the gaps between the education-level groups have widened. Thus, the returns to education are even stronger than they had been previously, and education disparity contributes heavily to later family income disparity. Third, so difficult has the economic situation of those with less than a 4-year degree become that the trend of their income has been down for more than 25 years. In the United States fewer than two in five persons earn a 4-year degree (U.S. Census Bureau, 2012a).

Goldin and Katz (2008), in one of the most thorough treatments of education, technology, and income published to date, have shown by analyzing data over the past century and more that the correlation between education and earnings has been growing, in large part because of the rise of jobs in which technology plays a major role. But by any measure of educational achievement, children from low-income families are falling further behind. As we have seen, based on analysis of 19 nationally representative data sets, Reardon (2011) showed that under nearly every measure, achievement gaps between Blacks and Whites have narrowed while the gaps between children from upper-income and lower-income families have widened. If education is becoming more important in determining income, and educational achievement of children from families in the middle class or above is getting progressively higher than that for children from low-income families, the prospects for reducing poverty and income inequality and for expanding economic opportunity are dim.

A third factor contributing to the increase in both poverty and income inequality is the rise of single-parent families. Children in female-headed families have a poverty rate that is 4 or 5 times as high as children living



**Figure 17.7** Education and family income over time.

*Source:* Income figures adapted from Brookings tabulations of data from the Annual Social and Economic Supplement to the Current Population Survey, 1964–2012.

in married-couple families (U.S. Census Bureau, 2012b). It follows that the higher the share of the nation's children who live with single mothers, the higher the poverty rate is likely to be. Between 1970 and 2011, the proportion of children living with single mothers increased from 11.6% to 26.1% and is still rising (U.S. Census Bureau, 2012c). The most important factors in the increase of children in female-headed families are the rapid decline in marriage rates among those with less than a college education and the substantial increase in nonmarital births. Since 1960, the marriage rate among all women aged 40 to 44 has declined by 23%; the marriage rate among women aged 20 to 24 (a prime age range for nonmarital births) fell from 60% to 16% (Cancian & Haskins, 2013). In a trend that is undoubtedly connected to the decline in marriage, the percentage of nonmarital births population-wide has risen from around 11% in 1970 to nearly 41%, including a rate for Blacks that is over 70% (Martinez, Daniels, & Chandra, 2012).

Like growing achievement gaps, nonmarital births are correlated with the rise of inequality as well as the rise of poverty. Furthermore, there is a direct relation between education and the probability of having a nonmarital birth. The highest rate of nonmarital births is among high school dropouts, the next highest among women with only a high school degree but no college, the next highest among women with some college but not a degree, and by far the

lowest among women with a college degree (Cancian & Haskins, 2013; Martinez et al., 2012). As with the data on educational achievement, low-income families are at highest risk for behavior that reduces their child's prospects for avoiding poverty and for moving up the income scale.

A fourth factor in understanding the relation between poverty and inequality is work. As Sawhill and Karpilow (2013) point out, 60% of the households in the bottom third of income do not work or work less than full time. A major part of the explanation for low work levels is that the United States is experiencing a long-term trend in declining work levels among males. Our calculations, based on decennial census data, show that between 1970 and 2010, the percentage of employed males who were high school dropouts declined from about 88% to 67%; the decline for males with a high school degree was from 95% to 76%. The work rate among young Black males who are high school dropouts is less than 50%. With the exception of adults with large inheritances and adults who hit the lottery, it is all but impossible to avoid poverty without working. Except in rare cases, welfare alone will not bring families with children out of poverty. The impact of work—even at low wages—on poverty is well illustrated by the rapid rise in employment among never-married mothers in the mid-1990s after welfare reform and a major increase in the Earned Income Tax Credit (EITC) that provides a cash wage supplement to low-income workers. Over a 4-year



period, work by these mothers increased by 40% while the poverty rate among Black children (who are disproportionately likely to live in female-headed families), and all children in female-headed families, reached their lowest levels ever (Haskins, 2011). It is unlikely that poverty rates among children will decline very much unless work rates or hours worked by their parents increase.

Except among the elderly, the nation has made no progress against poverty since the early 1970s. To make matters worse, income inequality has increased substantially over the past three decades. Both the trends in poverty and income inequality result in large part from the underlying trends in stagnant wages at the bottom of the wage distribution, the decades long growth in the gap in educational achievement between students from low-income and high-income families, the rise of single-parent families with their very high poverty rates, and the decline of work among males, especially Black males. The two bright spots in this picture are the government tax and transfer system of progressive taxes and means-tested programs, which have slowed the growth of income inequality and allowed families in the bottom of the income distribution to increase their income and the increasing work rates among mothers at the bottom of the income distribution.

## **HISTORY OF GOVERNMENT PROGRAMS FOR CHILDREN<sup>1</sup>**

We turn now to a review of government means-tested programs, beginning with a brief review of their growth between the period before World War II and the War on Poverty in the 1960s and then a review of the most important programs as well as spending on the programs.

The history of American social policy is in large part a story of increasing government responsibility for keeping children, families, the disabled, the unemployed, and the elderly out of poverty. In addition, since roughly the mid-1980s, government has increasingly enacted policies to supplement the income of poor working families. The government's role in enhancing overall well-being is more controversial and mixed. Although local, state, and federal governments all have responsibility for raising revenue and operating programs to promote the general social and economic welfare, the federal government takes a greater role than the states and localities, both by supplying the bulk of

financing for social programs (with the exception of K–12 education) and by requiring states to meet certain requirements in order to qualify for federal funds.

These developments in the nation's social policy have coincided with powerful historical forces, perhaps the most important being the post-World War II growth of the nation's economy. The American economy has produced a volume of income and wealth, as well as goods and services, which would have staggered the imagination of anyone a century ago. Even most of the poor have goods that the middle class in previous generations did not enjoy (Rector & Sheffield, 2011). Another surprising factor in understanding the development of social policy is that government decisions about how much to spend on the poor and in what ways have hardly been influenced by the poor themselves. America lacks a tradition of either socialism or communism, which means that public debates about and legislative action on social policy have occurred primarily among elites (Mead, 1992; Teles, 1996).

A related, and unfortunate, factor in the lack of political influence by the poor was the powerful influence of conservative and racist politicians from the South. For many years before and following the world wars, Southern Democrats ran without serious competition during general elections and thus built up seniority in both houses of Congress, which, in turn, allowed them to chair important committees and thereby control legislation. It was not until one of their own, a former Senate Majority Leader from Texas, Lyndon Baines Johnson, became president and used his power to overcome his former colleagues from the South that Congress was able to pass significant civil rights legislation and initiate a War on Poverty. Before the Civil Rights Act of 1967, and in truth even for many years after 1967, Blacks in the South were largely deprived of their right to vote. Since Blacks acquired their right to vote and hold office in the South in the 1970s, federal and state spending on social programs has increased dramatically.

Another important factor has been philosophical differences between liberals and conservatives over three issues: (1) government's responsibility to rescue children from the harm of hunger and poverty (by enactment of safety net programs); (2) government's role in ensuring equal opportunity for all children, no matter what the financial circumstances of their birth; and (3) government's ability to improve outcomes for all children through social programs.

Although America led the world in spending on public education until well into the 20th century, today the United States trails many advanced democracies in spending on

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<sup>1</sup>Parts of this section are based on Haskins (2008).

the poor and spending to equalize opportunity (Garfinkel, Rainwater, & Smeeding, 2010). Education, both K–12 and postsecondary, held out the opportunity for millions of Americans in every generation to achieve economic success. In fact, so great was the American advantage in public schooling and university education that education was perhaps the single most important factor in the nation's explosion of innovation and productivity in the years after the Civil War and the amazing growth of the nation's GDP (Lindsey, 2007).

As the nation's economy grew, it gradually became clear that many children still did not benefit from the opportunity presented by free public education. This problem was less obvious when the nation's economy generated a high proportion of service jobs and even manufacturing jobs that did not require much education. But since at least the 1970s, education and acquired skills have become an increasingly important determinant of income. Children who have lived in poverty tend to do poorly in school and, in turn, are less likely to get jobs with high pay as adults (Goldin & Katz, 2008).

### **Social Policies Before 1935**

Before the Social Security Act of 1935, state and local governments were solely responsible for public education, while families, often assisted by local organizations and especially churches, were largely responsible for the private caring of their own elderly, sick, disabled, destitute, and child members. Even so, several public policies, though modest in scope, were instituted during the period before 1935 that initiated an historic trend of greater government involvement in addressing the nation's social problems. One of the first social policies was federal and state pensions for Civil War veterans and their families (L. Gordon, 1994; Skocpol, 1991), which were generous, extensive, and expensive. But as Civil War veterans began to disappear, so did veterans' benefits. Another early policy was workers' compensation, an all but exclusive domain then and now of state government, which provides cash income and medical care to workers injured on the job (Fishback & Kantor, 2000). A third public policy was the federal Sheppard-Towner Act of 1921. The Act provided matching funds for states to establish programs to teach mothers about maternal and child hygiene. All but three states had established programs by the late 1920s, but the federal legislation was not reauthorized in 1929. The premature demise of Sheppard-Towner and its clinics did not obviate the fact that states had established a short but

lively tradition of providing public help to mothers and infants to improve their health, a capability states would soon have opportunity to use again.

Finally, and perhaps most important, nearly every state enacted mothers' pensions to provide benefits to widows—and, more grudgingly, to other single mothers—so they could stay home to rear their children. These programs, first enacted by Illinois in 1911 and then spreading to 40 states before the 1930s, allowed local jurisdictions to establish programs of cash assistance for poor single mothers (Skocpol, 1991). The characteristics of these pensions would greatly influence future social policy. First, the benefit was means-tested, providing support only for single mothers in financial need. As other industrialized nations established universal programs providing cash grants to all families with children, these means-tested American programs appear unique. Second, each state established its own program, leading to great variability rather than a single national set of requirements and benefits. Third, although the major purpose of the benefit was to allow single mothers to stay home with their children, the benefit was not given to all single mothers. At first, the benefit was given primarily to destitute widows. Subsequently, nearly every state included all single mothers. To qualify for the benefit, mothers were required to maintain homes that were consistent with community standards, thereby necessitating judgments about whether the mothers were providing an environment fit for rearing children (Bell, 1965). Thus was established the American tradition that if government paid a family benefits, government had a right to impose living arrangements that conformed to vague criteria such as "community standards."

### **Social Security Act**

The Social Security Act of 1935 initiated a process of formalizing and expanding social programs and supplementing or replacing state and local control with federal control. State and local governments remain important to this day, but the federal government, formerly a bit player, now entered the field of social policy with flags flying.

The Social Security Act featured several types of programs, which in either their original or substantially expanded forms today constitute a major portion of the nation's social policy for children. Title IV of the act established the nation's leading welfare program for mothers and children, the Aid to Dependent Children program (which has been renamed twice and is now the Temporary Assistance for Needy Families program or TANF),

offered states federal matching funds to establish programs that would give cash benefits to poor children and their mothers.

The federal-state cash welfare program lasted for more than six decades before being replaced by the TANF program enacted as part of the sweeping Welfare Reform Law of 1996. Over the years between 1935 and 1996, a host of important welfare programs—including programs to encourage or force fathers to pay child support; to provide support for abused and neglected children; to provide medical benefits to mothers, children, and the elderly; and to provide social services to needy families—were added to the Social Security Act.

The Old-Age Insurance program (called “Social Security”), established by Title II and amended many times over the years, has become the centerpiece of American social policy. Social Security made the federal government the source of security for life’s greatest vicissitude (to use Roosevelt’s term); namely, old age. Over the years, Congress helped many branches grow from this mighty oak, including survivors’ benefits in 1950, disability insurance in 1956, Medicare health insurance for the elderly in 1965, and a prescription drug benefit for the elderly in 2003. Today, about 38 million people receive Social Security retirement benefits and about 6 million families receive survivor benefits that average around \$1,050 per month; about 8 million people receive disability benefits that average over \$900 per month; and about 47 million people are enrolled in Medicare and prescription drug coverage (U.S. Social Security Administration, 2012a, 2012b). The Social Security Act, both in 1935 and today, embodies two of the major fault lines in American social policy: welfare versus insurance programs and federal versus state control. Broadly, the nation has two types of social programs that pay individuals: insurance programs and means-tested programs. Insurance programs provide benefits that are earned because they are based on tax payments over all of a person’s productive years and are mostly paid to people who are not expected by the public to work—the elderly, the disabled, and workers temporarily unemployed but looking for work. Means-tested programs, by contrast, are provided to people based in part on low income without a requirement of having paid into the financing structure.

It was Roosevelt’s intention to establish Social Security retirement and unemployment compensation as universal programs that did not require a means test. Many New Dealers lived by the motto that “poverty programs are poor programs.” Thus, Social Security old-age benefits, survivors’

benefits, disability insurance, and Medicare are all based in part on the insurance principle, although the details of the trust funds that pay the majority of these programs differ. All the insurance programs are hugely popular and are seen by the public as “earned benefits,” no matter what the facts are about financing or the relation between contributions and benefits.

In contrast, means-tested programs are not based on contributions but rather on the willingness of taxpayers to provide low-income families (especially single mothers) with cash and in-kind benefits including health care, food, housing, employment and training assistance, and social services. The perception that means-tested programs are “entitlements not based on earned benefits” leads them to be unpopular with the segment of the population that believes that these “handouts” should be stopped or at least reduced. In this context, it is not surprising that recent innovations in conditional cash transfers that involve even modest parental obligations have grown in popularity (e.g., Clinton-era welfare-to-work, Mexico’s *Progres*a, and New York City’s welfare reform).

As early as 1935, the federal government placed the insurance programs almost entirely under federal control (unemployment compensation is a partial exception) while sharing the means-tested programs with the states. Federal dominance of the insurance programs raises the second fault line in the nation’s social policy, federalism. Federal control over insurance programs almost completely cuts states out of the decision-making. Assuming a close relation between decision-making authority and support, federally operated insurance programs avoid the challenge of how to get states to comply, support, and administer programs with fidelity. On the other hand, state-controlled programs that have federal financial backing suffer from the possibility of uneven administration and fidelity with uneven impact.

### The War on Poverty

If the Social Security Act of 1935 expanded the federal role in the nation’s social policy, the War on Poverty of the mid-1960s solidified and extended the federal role, opening the door to a host of programs and policies to help poor children gain a chance at success in life. The War on Poverty itself did not represent a major initiation or expansion of big programs and spending. Rather, it committed the federal government to helping poor children and created a few modest programs to implement the commitment. Subsequently, Congress and a series of

Republican and Democratic presidents expanded the War on Poverty programs and enacted new programs to deliver on the promise of helping the poor, especially children.

The War on Poverty was developed and enacted under President Lyndon Johnson. He cajoled Sargent Shriver, a member of the Kennedy family who was already heading the immensely popular Peace Corps, into leading the effort to pass legislation that would provide the funding. Shriver developed the programs by hiring and empowering a group of intellectuals, many with Washington experience, and by enlisting many others from federal agencies, with very little consultation with Congress or the governors (Gillette, 2010). Johnson and Shriver assumed from the beginning that the programs would have to be federal because so many of the southern governors and governments were racist and could not be counted on faithfully to implement anti-poverty programs which were, after all, aimed disproportionately at helping Blacks. Although the War on Poverty created many programs and the Office of Economic Opportunity, perhaps the best known programs are directed toward children and families, including the still-active Head Start, Job Corps, VISTA, and the Community Action Program.

## CURRENT MAJOR GOVERNMENT PROGRAMS FOR CHILDREN

As it turned out, the War on Poverty opened a new chapter in American social policy. Over the next nearly half century, the nation would enact a host of means-tested programs and expand some of those created during and before the War on Poverty. By the second decade of the 21st century, the federal and state governments would be operating more than 80 major means-tested programs and spending around \$1 trillion on poor and low-income Americans.

### Spending on Means-Tested Programs

In this section, we review spending on means-tested programs in general and then spending specifically on children. We emphasize spending because we believe budgets operationalize government's values and priorities. Programs discussed in this section do not include spending on Social Security, Medicare, Disability Insurance, or Unemployment Compensation because these are insurance, not means-tested, programs. Spending on these four programs alone totaled a little over \$1.4 trillion in 2012 (Office of Management and Budget, 2013). To the extent that

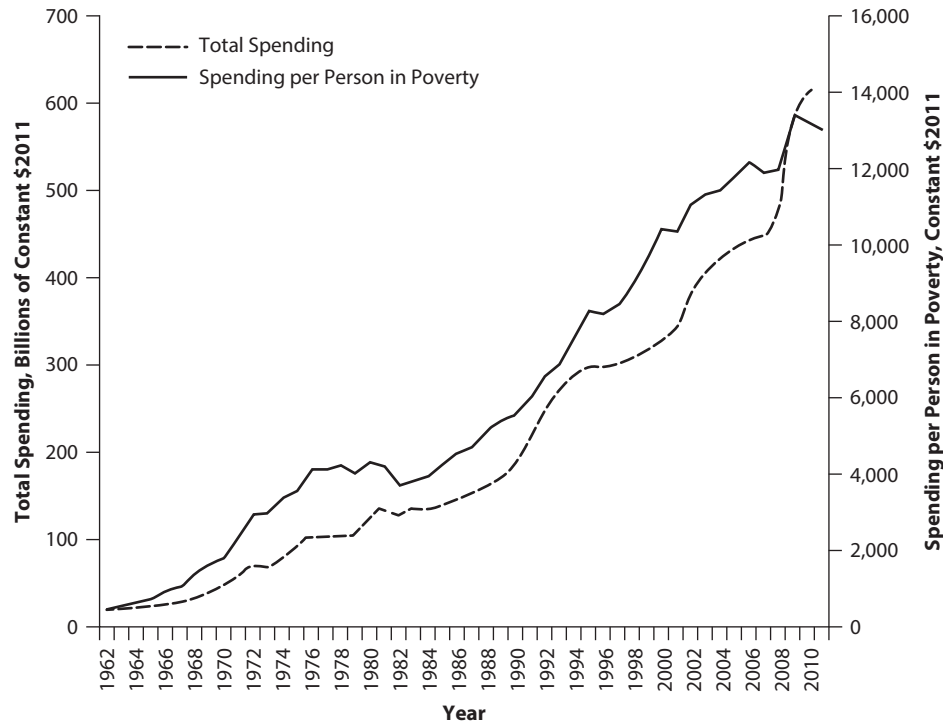
spending reflects relative importance and priority, these figures provide an account of how government leaders intend to exert influence on children's development.

The lower line in Figure 17.8, based on federal budget data published by the Office of Management and Budget, shows federal spending in dollars adjusted for inflation since 1962 on the 10 largest means-tested federal programs. In 2011, about 87% of this spending was on entitlement programs such as Medicaid, Supplemental Nutrition Assistance Program (SNAP; formerly food stamps), and Supplemental Security Income. Entitlement programs do not require an annual appropriation, meaning that anyone eligible for the benefits in a given year has a legal right to receive the benefit. By contrast, discretionary programs require an annual appropriation that is often not large enough to pay for everyone eligible for the benefit. Thus, the benefits are rationed. Childcare programs and housing programs are discretionary, and many eligible children and families do not receive the benefit.

Clearly, federal spending on poor and low-income Americans has increased enormously. Since 1980, by which time all but two of the 10 programs that spent the most money in 2011 were in place, spending has increased by about \$500 billion, from \$126 billion to \$626 billion after adjusting for inflation.

One cause of the increase in spending is that both the population and the number of poor people in the United States have increased over time. As shown by the solid line in Figure 17.8, which expresses spending on the 10 biggest federal means-tested programs on a per-person-in-poverty basis, spending has increased substantially. Over the past five decades, federal spending on major means-tested programs has increased from about \$516 to a little more than \$13,000 per person in poverty in constant dollars, although much of this money is spent on people above the poverty line. If we use the figure on spending per person in poverty in 1980, the increase is from about \$4,300 to \$13,000 per person, or more than \$3 spent in 2011 for every dollar spent in 1980. More recently, means-tested spending on the 10 biggest programs increased from about \$477 billion to \$626 billion between 2008 and 2011, an increase of about 31%. However, the recession that began in December 2007, which led to the decline in household income and the increase in poverty during and following the recession, is an important part of the explanation for recent increased means-tested spending. Most of the means-tested spending that the American Recovery and Reinvestment Act of 2009 authorized began to expire in 2010, and disappeared by 2011 or shortly thereafter.





**Figure 17.8** Secular trends in spending on 10 biggest social programs.

*Notes.* This series includes 10 spending sources: Medicaid, SNAP, EITC, CTC where credit exceeds tax liability, SSI, AFDC/TANF, Housing Assistance, Medicare Part D Low Income Subsidy, ESEA Title I Grants to Local Educational Agencies, and Federal Pell Grants. Data on the last two are available starting only in 1980 and include approximately \$27 billion in ARRA spending in 2009.

*Sources:* Most spending sources from OMB, Fiscal Year 2013 Budget, Tables 8.5, 11.3, 12.3. Title I and ESEA spending from Department of Education Budget History Table. Medicare data from CMS, 2011 Medicare Trustees Report, Table IV.B11, number for 2011 is estimated. All figures adjusted to constant dollars using OMB total deflator from historical table 10.1. Data on number of people in poverty through 2010 from U.S. Census Bureau, 2011, number estimated by Richard Bavier.

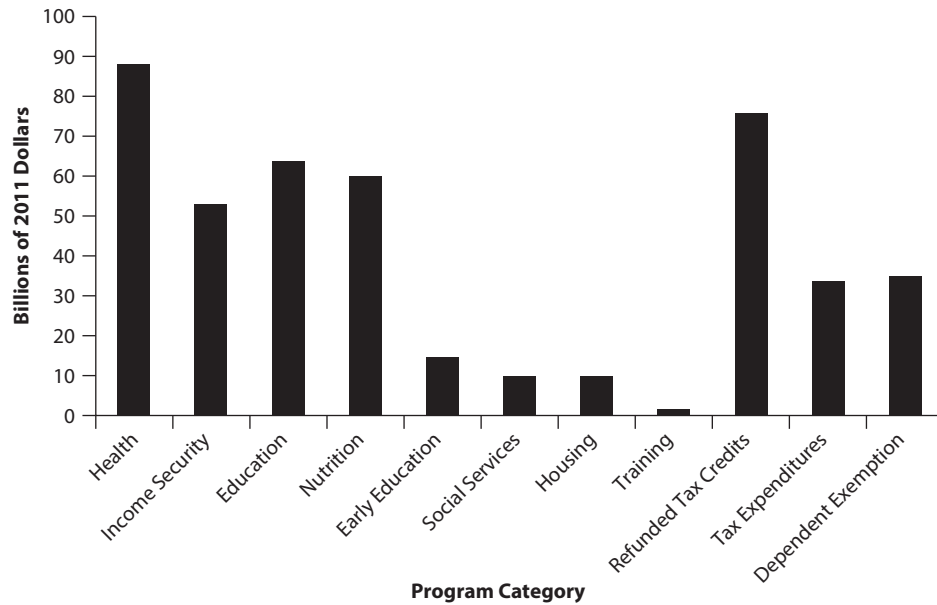
Not all means-tested spending is included in Figure 17.8. The Congressional Research Service (CRS) has reported on federal means-tested spending that includes 86 major programs in eight broad categories (CRS, 2012). The categories include health, cash, nutrition, housing, education, social services, energy assistance, and employment and training. Not surprisingly, health is by far the biggest category of spending at \$339 billion in 2011, well over twice as much as cash programs (\$145 billion), the second biggest category (CRS, 2012). Employment and training at \$6 billion and energy assistance at \$5 billion are the smallest of the eight categories.

It should be emphasized that not all means-tested spending is spent on poor people. Children in families of up to 200% of the poverty level, for example, are eligible for Medicaid or the Child Health Insurance Program (CHIP) in almost every state. Similarly, people in households with incomes up to 130% of poverty are eligible for SNAP benefits. In the case of the EITC, in 2012, a single mother with

two children could receive benefits if the mother's income was below \$41,952, about 220% of the poverty level for this family (Internal Revenue Service, 2013). Armor and Sousa (2012) used Census Bureau data and data from other sources to estimate that about half the benefits in the major poverty programs go to people and families whose income is over the poverty line at some time during the benefit year.

### Spending on Children

Isaacs, Toran, Hahn, Fortuny, and Steuerle (2012) have performed extensive analyses on changes over the past half-century in spending on children. Figure 17.9 provides an overview of federal spending on a total of 86 individual programs from which children benefit organized into 11 broad categories. In this analysis, spending on children from insurance programs such as Social Security is included (not just means-tested spending as in the analyses



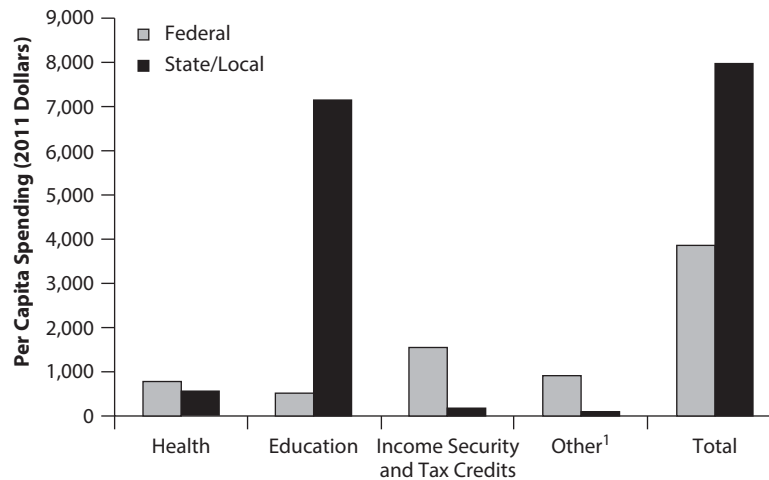
**Figure 17.9** Children's spending by category, 2011.

Source: Adapted from *Kids' Share 2012: Report on Federal Expenditures on Children through 2011* (p. 21), by J. Isaacs, K. Toran, H. Hahn, K. Fortuny, and C. E. Steuerle, 2012, Washington, DC: Urban Institute.

reported above). According to this analysis, in 2011 the federal government spent \$376.2 billion on programs that directly benefit children or provide help to households because children are part of the household. The major components of this spending are health, income security (primarily from Social Security, cash welfare, child support enforcement, and veterans' benefits), education, nutrition, early education, and various provisions in the tax code. The biggest single program is a health program (Medicaid), but the tax provisions combined are even bigger than the Medicaid benefit (\$144.1 billion compared with \$73.9 billion). Spending on children is similar to the trends for overall social spending in that there has been an increase in both the number of programs and total spending over the past half century, although future trends in spending are very much in doubt (see below). In 1960, the federal government spent about 3% of the federal budget, or \$58 billion, adjusted for inflation, on children. Both the amount of money and the percentage of the federal budget spent on children increased every decade, growing to 11% of the federal budget, or \$445 billion, in 2010. Thus, federal spending on children has more than tripled as a share of the federal budget and increased by 7.7 times in constant dollars over the past half century. This increase in spending reflects not simply a growing financial commitment to children but a broadening of the types of support provided to children. Support for abused and neglected

children and nutrition was undertaken in the early 1960s and dramatically expanded in the 1980s; health care and preschool education were added in the mid-1960s; help for the disabled and help with housing grew in the 1970s; and major expansion of programs that provide cash through the tax code occurred in the 1980s and 1990s.

The federal government is not the only source of support for children. In fact, unlike the pattern with all means-tested spending and all social spending, the majority of spending on children is paid for by local and state government (Figure 17.10), primarily because state and local governments pay for about 93% of public education. Because of Medicaid, with costs split between the states and federal government, states also spend a great deal on health, \$549 per child or about 40% of the total spending on children's health. Income security and tax credits, by contrast, are paid for primarily by the federal government, about 90% of the total. The federal government also spends more than 8 times as much as states on child nutrition, early education, social services, housing, and training (see "Other" in Figure 17.10). Given the importance of education at the preschool, K–12, and postsecondary levels, states arguably represent the single most vital part of the nation's social policy for children. As such, state and local governments are of great importance to the nation's struggle to address growing gaps in income inequality, wealth, educational attainment, health, and life success.



**Figure 17.10** Federal and state/local spending on children, by domain.

<sup>1</sup>Includes nutrition, early education and care, social services, housing, and training.

*Note.* Tax expenditures are not included in this figure. The population of children (those < Age 19) was used to calculate per capita amounts.

*Source:* Adapted from *Kids' Share 2012: Report on Federal Expenditures on Children through 2011* (p. 26), by J. Isaacs, K. Toran, H. Hahn, K. Fortuny, and C. E. Steuerle, 2012, Washington, DC: Urban Institute.

The growth in both the number of programs aimed at helping children and the level of spending on these programs indicates a rising commitment to the well-being of children by the federal government and the states. However, two additional issues provide some perspective on the nature of the nation's commitment to children. First, in 2011, for one of the few times in the past half century, federal spending on children actually declined in constant dollars. According to Isaacs and colleagues, total federal spending on children fell from \$450.1 billion in 2010 to \$444.8 billion in 2011. The decline in spending on children is accounted for primarily by the end of spending from the American Recovery and Reinvestment Act of 2009. The second issue is the comparative commitment to children versus the elderly. Isaacs and colleagues show that in 2008, the federal government spent \$3,882 per child as compared with \$25,455 per elderly person. Furthermore, 10-year projections from the Congressional Budget Office show that spending on children is expected to grow by only \$6 billion over the next decade while spending on Social Security, Medicare, and Medicaid will grow by \$876 billion (Isaacs et al., 2012). The clear message here is that spending on entitlement programs that benefit primarily the elderly is squeezing out spending on programs for children. Congress has never taken a direct vote on its view of the relative importance of spending on children versus spending on the elderly, but the budget decisions Congress has made in the past greatly favor the elderly. It seems likely that if the current trajectories of increase in spending on the elderly for

Social Security and Medicare continues, every other part of the budget, including children's programs, will be reduced.

### Specific Programs for Children

The review above traces the evolution of spending on programs, but to understand the scope and goals of federal policy for children we must examine the specific programs that provide benefits and services to prevent or ameliorate destitution or to promote the growth, development, employment, and medical treatment of children, especially those from disadvantaged families. The federal government conducts thousands of domestic programs; the *Catalog of Federal Domestic Assistance* contains about 2,200 programs (General Services Administration, 2013). Many of these programs have a direct or indirect impact on children. A more refined list of programs that influence children, which includes only major programs, is published by the Congressional Research Service (CRS, 2012). The CRS report includes detailed descriptions of 86 means-tested programs divided into eight categories. Here we review major programs, defined as programs that spend the most money or have the most participants, selected from the 2012 CRS report and various other reports from government agencies.

### Health

The federal government spends more money on means-tested medical care and related programs than on any other category of means-tested spending. In 2011, total

spending on the 10 most important means-tested health programs totaled nearly \$340 billion (CRS, 2012). By any measure, the most important health program for children is Medicaid. Although the United States trails other advanced nations in the share of its citizens who are guaranteed health care, Medicaid coverage of children has expanded greatly since its inception in 1965 until today when virtually every child in families under 200% of poverty is covered. After full implementation of the Affordable Care Act (the Obama health care law, enacted in 2009), all children should be covered by Medicaid or private health insurance. Medicaid now covers 16 million low-income adults and 15 million people who are elderly or disabled, but it also covers 31 million children, some of whom are disabled (Kaiser Commission on Medicaid & the Uninsured, 2013). Despite the huge number of children covered by Medicaid, only 20% of Medicaid's expenditures of \$414 billion in 2011 were on children. The disabled consumed 42% of Medicaid expenditures, the elderly 23%, and adults the remaining 14%.

Medicaid is funded through a partnership between the states and the federal government. The federal government pays at least 50% of the cost in every state, but above 50% in states with low per capita income. The specific percentage for each state, called the federal medical assistance percentage or FMAP, can go as high as 73% in states with very low per capita income. One exception to the FMAP formula is that family planning services, including contraception methods and supplies, are funded with a 90% federal match (Kaiser Commission on Medicaid & the Uninsured, 2013).

Eligibility for Medicaid is exceedingly complex and varies greatly from state to state. Generally, the groups qualified for Medicaid include low-income families with children in which one parent is absent, incapacitated, or unemployed; people with low income and a disability; and the low-income elderly. All children in foster care or adoption whose caregiver receives coverage under the federal foster care and adoption program are also covered. In addition, children from families with income as high as 200% of poverty, certain pregnant women, some women with breast or cervical cancer, and certain people with tuberculosis are qualified for coverage. Arguably the most important Medicaid expansion in recent years was making children from families with higher income eligible regardless of whether they were on AFDC or SSI, an expansion that solved one of the thorniest work incentive problems under the old system of limiting coverage to children on SSI or AFDC. If working families increase their earnings above the state's threshold eligibility level and lose

Medicaid, they are given a 6- to 12-month transition period of extended coverage.

Medicaid coverage will expand greatly as the Affordable Care Act (ACA) is implemented beginning in 2014. It will be recalled that states pay on average about 45% of the cost of Medicaid—a cost that imposes a huge burden on the budget of every state. Although the federal government will pay nearly all the costs of the ACA Medicaid expansions in the early years of ACA, many states with Republican governors are threatening not to accept the additional coverage and not to run the health care exchanges that are a vital part of the ACA health care expansion strategy. How these issues are resolved will have an important impact on how much Medicaid expands under ACA. Current estimates, by the Kaiser Family Foundation and others, are that ACA will cause Medicaid costs to expand by around 16% (Kaiser Commission on Medicaid & the Uninsured, 2013). In addition to ACA, the retirement of the baby boom generation will substantially boost Medicaid costs because so many of them will require long-term care which is covered under Medicaid for most of the low-income elderly.

There are many additional programs that provide medical services to low income children and adults, including the Indian Health Services, a program for low-income veterans with service-connected disabilities, family planning services, and the Maternal and Child Health Services Block Grant. Although all are much less expensive and cover fewer children than Medicaid, they represent an important part of the nation's commitment to paying for or providing health care to disadvantaged children and families.

### *Cash Transfers*

Some economists argue that cash is the best benefit because it allows recipients to buy what they most need or want and thereby maximize their utility. Thus, it is entirely appropriate that the second highest category of means-tested federal spending is on programs that provide recipients with cash. The federal government began the practice of providing cash transfers to the destitute in 1935 when the Aid to Dependent Children program was created as part of the Social Security Act. Since that time, the federal government has enacted three major cash transfer programs that provide funds to low-income individuals and families: Supplemental Security Income (SSI), the Earned Income Tax Credit (EITC), and the Additional Child Tax Credit. Taken together, TANF (AFDC's replacement program) and these three cash programs now place around \$145 billion in cash in the hands of poor and low-income families, individuals, and children each year (CRS, 2012).



Since it began implementation in 1974, the SSI program has provided benefits to people who were poor and were also either elderly or disabled. The program provided cash benefits worth \$60 billion to the poor disabled or elderly in 2011. Nearly 8 million people receive the benefit, about 16% of them disabled children (U.S. Social Security Administration, 2012b). SSI enrollment, like enrollment in the Social Security Disability Insurance (SSDI) program, has increased in recent years, leading many analysts to express concern about both the costs of the program and the effects on children's development of being placed in disability programs (Burkhauser & Daly, 2011; Duggan & Imberman, 2008). Similarly, the Office of Management and Budget has examined possible reforms to SSDI that might help more people with borderline disabilities (especially muscular/skeletal and mental impairments) remain in the labor force, at least on a part-time basis, thereby slowing the increase in enrollment (Liebman & Smalligan, 2013). Under current assumptions, the trust fund that supports the SSDI program is scheduled to run out of cash in 2016, adding a sense of urgency to discussions about rising enrollment projections. Because 1.7 million children receive benefits from SSDI, its financing is an important issue for the well-being of children (Social Security Administration, 2012a).

The two tax credit programs are in many ways ideal policy for low-income families. With the modest exception of a small benefit for childless workers (with a maximum payment of about \$500 per year), the EITC and the Additional Child Tax Credit go only to families with children, only families with earnings, and only families with low-income. Although both programs are means-tested, it seems misleading to call them welfare programs because only adults who work are eligible for the benefit. The benefit is larger for families with two children and larger still for families with three or more children. Using families with one child as an example, the EITC benefit is equal to 34% of earnings up to \$9,320. The maximum benefit of around \$3,000 stays flat for earnings between \$9,320 and \$17,090. The benefit then phases out at the rate of 16% of earnings above \$17,090 and reaches zero at earnings of \$36,920. The phase-in and phase-out rates are different for families with additional children; the maximum benefits for families with two and three or more children are \$5,200 and \$5,900 respectively. A provision enacted by Congress as part of the 2009 Recovery Act reduced the penalty in their EITC payment that some couples would experience by getting married. In 2010, around 27 million working families and individuals

received the EITC (Center on Budget and Policy Priorities [CBPP], 2013b).

The Additional Child Tax Credit is similar in many ways to the EITC. The credit is based on work, targeted on families with children, and given only to low-income families. Like any tax credit, poor and very low-income families cannot benefit from the regular Child Tax Credit, which had been enacted in 1997, because they have no income tax liability against which to take the credit. Thus, the EITC and a few other credits have been made refundable by Congress, meaning that if a family met the terms of the credit, the IRS would send them a check. In 2011, 2.9 million people, including 1.5 million children, were prevented from falling into poverty by the Child Tax Credit (including the Additional Child Tax Credit) (CBPP, 2013a). The total value of the credit to working families in 2011 was a little less than \$23 billion (CRS, 2012).

### *Nutrition*

The federal government, sometimes in cooperation with the states, conducts 12 major nutrition programs, all but one of which provide direct or indirect benefits to children. Taken together, these programs provided poor and low-income individuals, families, and children with more than \$101 billion in benefits in 2011. The biggest program by far is the Supplemental Nutrition Assistance Program (SNAP; formerly called food stamps). SNAP has grown rapidly since 2000, mostly because of the weak U.S. economy, which has had the effect of reducing the income of millions of families, making many of them eligible for SNAP. In 2011, when the program cost \$78 billion, 45 million people received SNAP benefits in an average month as compared with only about 20 million recipients in 1990. About half the 18.4 million households that received SNAP in 2010 had children (Congressional Budget Office, 2012).

SNAP stands out from other means-tested programs in that almost everyone who meets the standard of low income is eligible to receive the benefit. Most of the nation's other means-tested programs require recipients to meet conditions in addition to low-income, such as having a disability, being a single parent, or working. SNAP is a guaranteed income paid in electronic cards that can be used only for food purchases, although the program has a work requirement for some recipients that is usually not enforced by states.

In addition to SNAP, other programs provide children with nutritious foods. Taken together, these programs cost about \$23 billion in 2011 (CRS, 2012). The most expensive programs are the National School Lunch Program

(\$9.8 billion), the Special Supplemental Nutrition program for Women, Infants, and Children (called WIC; \$7.3 billion), the school breakfast program (\$3.0 billion), and a program that subsidizes snacks and meals in childcare facilities (\$2.5 billion). The goals of all these programs are to “improve children’s nutrition, increase lower-income children’s access to nutritious meals and snacks, and help support the agricultural economy” (Richardson, 2009, p. ii). This goal statement for child nutrition programs, taken from a CRS document, nicely illustrates an important political fact about nutrition programs, including both the child nutrition programs and SNAP; namely, that the support from the large and powerful agriculture lobby (including the lobby for grocery stores) for all nutrition programs is one of the reasons these programs are so strong and have grown so much in recent years. Although funding levels might decline modestly over the next decade, nutrition programs are all but politically invulnerable. The child nutrition programs operate in all 50 states, Washington, D.C., and most of the territories. They are administered mostly by states, although the Department of Agriculture has rules and regulations as well as a reputation for thorough administration. School Lunch and School Breakfast programs have been shown to provide 28% of the daily consumption of food by participating children (Potamites & Gordon, 2010).

### ***K–12 Education***

Crosnoe and Benner (Chapter 7, this *Handbook*, this volume) discuss how school influences children, and so the emphasis here is on spending and policies. Although public education in the United States has its roots in colonial New England, it gained support in the mid-19th century when waves of immigrants posed a challenge to the democracy (Coleman, 2002). Immigrants needed to be educated to fill emerging factory jobs, but even more importantly, they needed to become competent to participate in the new democracy. Education was the proposed solution with the realization that a successful democracy required a populace that participated peacefully and competently, endorsed values of equality of voice, and understood issues sufficiently to vote responsibly (Lagemann, 2000). Controversy arose over whether public education should be offered to every child or just the poor. Universal education won out. Following Massachusetts’ education law of 1882, 34 states passed compulsory schooling laws by the end of the 19th century, most requiring attendance from Age 7 through Age 14 or higher. By 1918, every state required children to attend elementary school (National Center for Education Statistics,

2004). The blot on this history, though, was the prohibition against any kind of schooling for enslaved Blacks, followed by separate and poorly funded systems for Blacks in the south.

The structure of public schooling was shaped by scientific knowledge and political and economic realities of the mid 1800s, and these features have not changed much since, in spite of scientific discoveries and changes in the political economy. As secretary of education for Massachusetts in the mid-1800s, Horace Mann created a system that mimicked assembly lines in emerging factories: For the first time, children were placed in same-age grades and were taught the same curriculum in every school (called the “common school” movement), even if their skill levels varied wildly. Professional teachers were trained in colleges that were called “normal schools.” Booker T. Washington led the development of a separate education training system for Blacks at Tuskegee Normal and Industrial Institute.

The age requirement reflected contemporary scientific understanding that children younger than Age 7 (the “age of reason”) could not be taught and there was little that most children needed to learn past Age 14 (later, 16), when they were assumed to be ready for work. The emerging school schedule acquiesced to the demands of farmers who needed children at home in the summer, to the great majority of families that had a mother at home full time to greet children in the afternoon, and to organized religion that honored the weekend Sabbath. This schedule largely continues today, even though few children farm in the summer and a minority of mothers await children at home in the afternoon. Twenty-four states have lowered the age of compulsory school attendance to Age 6, and eight states to Age 5, in recognition of emerging scientific evidence that much brain development occurs in the younger years. Eleven states now require children to stay in school until Age 17, and 20 states require attendance to Age 18.

The goals, effectiveness, and conditions of public education have been sharply debated throughout history, especially since World War II. Public education received a double jolt in the 1950s when the Russian Sputnik passed over American skies, frightening policymakers into increasing the emphasis on reading, mathematics, and science to combat the Soviet threat, and when the Supreme Court ruled in 1954 in *Brown v. Board of Education* that racially separate public education was not equal education. The Coleman Report (Coleman et al., 1966) provided strong empirical evidence that family income and separation of school districts by race were more important

determinants of student achievement than school financial resources and that Black students had higher achievement when they attended integrated than segregated schools. The next decade saw massive forced busing to integrate public schools across the South.

Access to education for all children with disabilities received a major boost with the 1975 passage of the Education for All Handicapped Children Act, its extension in 1986 to young children, and passage of the Individuals with Disabilities Education Act (IDEA) of 1990.

In 1983, a report titled *A Nation at Risk*, issued by the U.S. National Commission on Excellence in Education (1983), further exposed the inadequacies of the public education system and cajoled educators into finding ways to focus education on training future scientists and engineers. The 1989 National Governors' Association conference paved the way for efforts to increase accountability in education, culminating in the bipartisan No Child Left Behind Act (NCLB) in 2002 that made high-stakes, end-of-grade testing the most important measure of education success. This movement asserted federal control over some important aspects of education in spite of its modest financial contribution to the overall public schools budget. States were required to report student progress annually and to punish schools that did not achieve adequate student progress on standardized tests. By 2012, however, half of the states were granted waivers from the requirements of NCLB because they had failed to meet standards of proficiency, and the reform has been deemed in need of major revision. Other reforms, such as independent charter schools, have been funded as alternatives to regular public

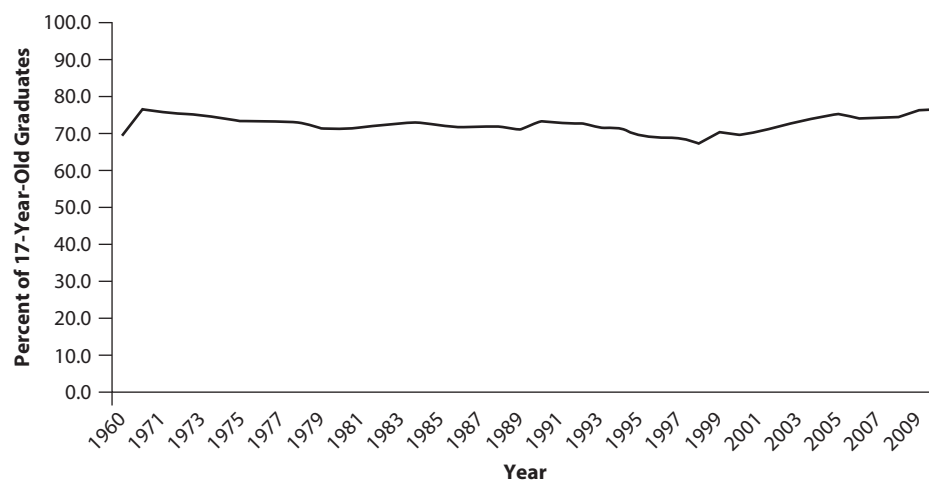
education. These schools rely on open markets to provide high-quality education and to force public schools to improve. Because charter schools take funding away from regular public schools, however, critics argue that they harm education for public school students.

In spite of accountability reforms, the high school graduation rate has stagnated since the 1960s at around 75% (see Figure 17.11). President Obama shifted the nation's goal away from improving test scores toward increasing the graduation rate to 90% by 2020. Obama also placed an emphasis on college and career readiness and preparing the work force for jobs in STEM (science, technology, engineering, and mathematics) areas.

What follows is a selective review of studies of major education policies.

Perhaps the most consequential government policy in education is the assignment of a student to a particular group of peers. Public schools assign students to different schools to achieve racial balance. They track students according to achievement levels, retain students in grade, and assign students to self-contained special education classrooms. Given the enormous influence of peers on student behavior, these practices have a strong effect on student outcomes.

Tracking students by academic ability is common policy in American schools, implemented mostly to improve outcomes for high-achieving students who can accelerate progress and take more advanced curricula (Oakes, 2005). Low-track classrooms suffer, however, from low-level content, low expectations, and behavior problems (Lucas, 1999). As a result, many schools in the 1990s "detracked"



**Figure 17.11** High school completion rates over time.

Source: Adapted from *Digest of Education Statistics*, 2010 (Table 110), by T. D. Snyder and S. A. Dillow, Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Available at <http://nes.ed.gov/pubs2011/2011015.pdf>

students back to heterogeneous classrooms. However, Argys, Rees, and Brewer (1996) found that when moved out of high-ability tracks, achievement of high-ability students declined, and in Massachusetts detracking led to declines in the rates of students performing at “proficient” and “advanced” levels on state tests (Loveless, 1999). Permanent tracking is common in European schools during the middle school years of Grades 4 through 8 when students are set on vocational trajectories. Hanushek and Woessman (2006) found that countries implementing early tracking systems are characterized by relatively high educational inequality and low average performance. Nonetheless, tracking has resurged in the United States in an effort to improve performance at the high end. Whether the benefits of tracking for high-achieving students offset the harm to low-achieving students, and how to optimize outcomes for all groups, are still matters of debate and research.

Grade retention is one of the most important levers in shaping a child’s education trajectory. Although numerous studies address the impact of grade retention on student success, almost none of these studies involve random assignment. Jacob and Lefgren (2009) used a regression discontinuity design to compare students who fell just short of the test criterion for passing with students who fell just beyond the criterion. He found that grade retention adversely affected students’ later outcomes of test performance and high school graduation.

Musckin, Beck, and Glennie (2013) realized that grade retention policies could affect the assignment of older, more deviant (and low-performing) peers to classrooms with younger, more vulnerable students. Adolescence is the period of maximal peer influences, and so the effect of grade retention policy might be strongest in middle school. They found that students in schools that had policies of higher proportions of grade retention (and thus many peers who are “old-for-grade”) had the lowest test scores and highest rates of suspensions for drug use.

Next we consider summer school. Most students fall back in academic achievement levels during summer break, but low-income students lose about three months of grade equivalency whereas middle-income students lose only about one month, thus widening the achievement gap (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). Summer school has become popular as a remedy, especially for marginally-performing low-income students. Kim and Guryan (2010) found significant gains in reading for low-income Latino/a American children in a voluntary summer program, thereby narrowing the achievement gap.

Next, it has been hypothesized that children’s learning is maximized with smaller student-teacher ratios. The largest test of this hypothesis is the Tennessee STAR experiment, in which about 11,000 children were randomly assigned to kindergarten and first-grade classrooms that varied between 16 and 24 students. Standardized tests revealed that children assigned to smaller classrooms exhibited performance that was about a quarter of a standard deviation higher than that of children assigned to larger classrooms (Finn & Achilles, 1990). Long-term follow-ups indicated that small classroom children had higher high school SAT scores and college matriculation (Krueger & Whitmore, 2000).

The success of the Tennessee experiment led California to adopt small kindergarten classrooms as statewide policy. Unfortunately, this implementation suffered from a failure to realize the assumptions inherent in the smaller Tennessee experiment, namely, that teacher quality would remain constant. In order to fill the increased number of classrooms, the state had to employ a large number of less-qualified teachers. The reduced average teacher quality led to lower student performance, which more than offset any gain that might have been due to smaller classroom size and led to a net reduction in student learning (Stecher, Bohrnstedt, Kirst, McRobbie, & Williams, 2001). Nonetheless, if other factors can be kept at high quality during implementation of smaller class size, gains in student achievement are likely.

The value of high teacher quality has been further popularized by a recent study of the long-term follow-up of the students in the Tennessee STAR experiment. Chetty et al. (2011) matched school records of kindergarteners with their adult income records obtained from the Internal Revenue Service (IRS) and found that having a kindergarten teacher with more than 10 years of experience (in contrast with less than 10 years) improves a student’s earnings at Age 27 by 7%, which translates to returns of hundreds of thousands of dollars across the life span.

State policy makers who are faced with budget shortfalls today have inferred from this experience that lower class size might not offset the adverse impact of a low-quality teacher. To balance budgets while retaining high-quality teachers, they have cut support for teacher aides. It is not yet clear how to increase the average quality of teachers. Increased salaries, better training, and different incentive plans are possible strategies to increase teacher quality.

Social-emotional learning (SEL) curricula have received increasing support. Teaching children to become socially competent to participate in a democracy was the original primary goal of public education, but this goal has



been attacked by religious groups as being more properly the domain of families and by critics as “soft.” Furthermore, several early character education curricula such as D.A.R.E. (Drug Abuse Resistance Education) were found to be ineffective (Ringwalt, Ennett, & Holt, 1991). Since then, however, newer curricula based on empirically-supported models of social competence have yielded positive impacts, and long-term analyses of early childhood interventions have indicated that their positive impact is mediated through enhancement of social competence (Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010). Several states have enacted legislation to require social-emotional learning (SEL) curricula.

A meta-analysis of 130 school-based SEL programs evaluated through randomized trials (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011) revealed net positive impact on students’ social-cognitive skills and antisocial behavior and indirect impact in the form of an 11-percentile-point gain in academic achievement. Curricula that target skills of problem-solving and self-regulation, and those that incorporate interactive role-playing and extensions to students’ real-life peer conflicts, are most effective.

### *Early Child Care and Education*

Since the War on Poverty, federal programs to support the early child care and education of children from low-income families, specifically Head Start and more recently Early Head Start, have been the primary early childhood education policy of the federal government. Over the past two decades, states have increasingly supplemented this effort with funds for programs to reach a larger proportion of the population of young children, although this funding has declined since the Great Recession. In 2013, President Obama proposed significant increases in this investment through federal-state collaboration for universal pre-kindergarten programs. Because these issues are addressed in detail elsewhere (Burchinal, Magnuson, Powell, & Soliday Hong, Chapter 6, this *Handbook*, this volume), our treatment of this topic is brief.

Contemporary early child care and education policy addresses four issues. First, the majority of the achievement gap in education performance is present before children enter kindergarten (National Center for Education Statistics, 2004). Public education in kindergarten and beyond is remedial, at best, in closing this gap. More promising efforts at closing the gap begin earlier in life. Second, the science of child development indicates rapid synaptic growth and neural development in the first 3 years of life

(Shonkoff & Phillips, 2000). Infants are born with brains that are only 25% of full adult size, but by Age 3, their brains have grown to 80% of eventual size. Enhancing growth and learning during this period might bring an opportunity for maximal return on investment if programs could be effective (Heckman et al., 2010). By Age 5, 85% of brain development is complete, although only 14% of public education dollars are spent on children before Age 5. Third, rigorous evaluations of several preschool programs reveal positive impact, suggesting that returns on investment might well be realized (Barnett, 2011). Finally, economic realities dictate that most households with young children must deploy every available adult to work outside the home in order to make ends meet; thus, out-of-home child care is a necessity and many parents are faced with a decision of how, rather than whether, to obtain the best-available care and education.

Head Start began as part of President Johnson’s Great Society campaign. The Office of Economic Opportunity initiated Project Head Start as an 8-week summer program in 1965 that was touted as a sound economic investment to reduce poverty. It was quickly realized that 8 weeks was not nearly enough to erase several years of economic and cognitive disadvantage for low-income children. A committee chaired by Robert Cooke, a pediatrician, created year-round Head Start as a comprehensive child development program. Head Start later began funding the television show *Sesame Street*. In 1970, Edward Zigler, a psychologist, was named by President Nixon to become the first Director of the Office of Child Development and Chief of the U.S. Children’s Bureau, which became responsible for administering the nation’s Head Start program. Head Start programs are administered locally by school systems and nonprofit organizations. Its administration outside the Department of Education signals a fundamental policy controversy between Head Start’s mission as early education or early child development. The 2012 federal budget for Head Start was \$8.0 billion. In addition, local grantees must provide a 20% cash or in-kind match.

Some nonexperimental studies of the effectiveness of the Head Start program show remarkable gains by participants in cognitive and social development. Garces, Thomas, and Currie (2002) examined 4,000 participants in the Panel Study of Income Dynamics followed from childhood into adulthood. Among White adults, those who had attended Head Start were significantly more likely to complete high school, attend college, and obtain higher earnings in their early twenties than their siblings who did not attend Head Start. Black adults who had attended

Head Start were significantly more likely to graduate from high school and less likely to be arrested than were their nonparticipant siblings. Deming (2009) used National Longitudinal Survey of Youth data to find that those individuals who had attended Head Start showed stronger academic performance than their nonparticipant siblings, and were also less likely to be diagnosed as learning disabled, less likely to commit crime, more likely to graduate high school and attend college, and less likely to suffer from poor health as an adult.

One problem with these studies is that they did not involve random assignment of children. The reputation of Head Start took a blow from a report (U.S. Department of Health and Human Services, 2010) of a large trial in which nearly 5,000 3- and 4-year-old children were randomly assigned to either Head Start or a control group that did not have initial access to Head Start, but could enroll in other early childhood programs or non-Head Start services selected by their parents. It turned out that 60% of the control group children participated in other child care or early education programs during the first year of the study, and about 15% enrolled in Head Start on their own in the second year. Thus, the counterfactual group to Head Start has become, at least in part, some other form of early care and education rather than no care at all. Nonetheless, the findings indicated that access to Head Start had an initial positive but modest impact on children's school readiness (in language and literacy, vocabulary, letter-word identification, pre-academic skills, letter naming, phonological processing, parent-reported emergent literacy, perceptual motor skills, hyperactive behavior, withdrawn behavior, dental care, health status, parent spanking, parent reading to child, and family cultural enrichment activities), but the cognitive gains fade out during kindergarten, disappear by the end of first grade, and do not reemerge in third grade. Preventing fade out remains a major policy challenge.

In fiscal year 1994, the Early Head Start (EHS) program was established to serve low-income children from birth to 3 years of age. Although its mission is similar, its reach is not nearly as great as that of Head Start: It served 147,000 children in 2011, with roughly a third in home-based care, a third in center-based care, and a third in combined care.

A randomized experiment with about 3,000 children at 17 EHS sites evaluated impact on children over time (Love, 2010). Children were assigned to EHS or were prohibited from EHS but could seek other services in the community and many did so. Children randomly assigned to EHS demonstrated more favorable outcomes in cognitive, language, and social-emotional development

(reduced aggression and attention problems) at Ages 2 and 3. At Age 5, impacts on reduced aggression and attention problems persisted, but impacts on cognition and language dissipated. Impacts did persist for children who moved from EHS to Head Start at Ages 3 to 5.

Follow-up at fifth grade revealed that overall positive impacts did not persist, but were evident for some subgroups, notably Black children (Vogel, Xue, Moidubbin, Kisker, & Carlson, 2010). Positive impact on reading and math was found for the subgroup that experienced EHS, Head Start, and then an elementary school that enrolled a relatively low proportion of children receiving free and reduced-price lunch. This finding, albeit not from random assignment to these follow-up experiences but rather self-selection, suggests that in order for the benefits of EHS to be sustained, a child must continue to experience an enriching educational environment.

### *Pre-Kindergarten*

In his State of the Union address in early 2013, President Obama took the unprecedented step of proposing expansion of high-quality preschool experiences to all children. He cited scientific studies of preschool programs in arguing that the sooner a child begins learning, the stronger the impact over time, and he pointed out that low-income families spend a large proportion of their income on care for their children under Age 5. The Center for American Progress estimates that the plan would cost about \$98 billion over 10 years.

Although the Obama proposal is not likely to be enacted as proposed, it has sparked debate about government support for universal education at younger ages, with at least five considerations. First, emerging findings in developmental neuroscience highlight the rapid growth of synapses in the first several years of life, suggesting the critical nature of beginning intervention early. Less clear is how early, that is, whether formal education should begin at Age 4, or earlier. Second, a growing body of research highlights components of programs that are most effective for children's cognitive and social development, and these components should drive the kind of program offered. Third, the plan must account for the fact that the majority of mothers in both single-parent and two-parent families must work outside the home if the family is to avoid poverty, and any universal preschool plan will need to support the family work schedules if it is to be sustained. Although President Obama's goal is to support children's educational development, preschool is a core part of most families' child care plans. Fourth, the "home" for universal

pre-K programs is being battled over by departments of education and health and human services, at least at the state and local levels. This decision is not only a political one; it also will alter the nature of early care as primarily educational versus child care. The former home would likely emphasize certification of teachers and curricula that look like kindergarten, whereas the latter home would likely emphasize more holistic, family-friendly care. No studies have examined which home agency leads to better outcomes.

### ***Higher Education***

The higher education system in the United States has been heralded as the best in the world (Universitas 21, 2012). At the turn of the 20th century, fewer than 1,000 colleges enrolling 160,000 students existed in the United States, but rapid growth ensued in large part due to philanthropists who endowed private institutions and federal funding from the Morrill Land-Grant Colleges Acts of 1862 and 1890, which created aptly named “land grant colleges” that specialized in agriculture and engineering. The 1890 act created all-Black land grant colleges dedicated to teacher training. States and religious bodies also funded teacher training colleges, called “normal schools,” which evolved into state colleges with a broad curriculum after 1945.

Higher education received another major boost in 1944 when Congress passed a program of aid to veterans who had served in wartime. The GI Bill supported millions of students by paying tuition and living expenses. It also fostered the belief that college education is necessary for life success, thus further increasing the number who attended college beyond veterans. This program biased enrollments toward men, given that few women had served in the military. However, by 2000, women began surpassing men in rates of college attendance and graduation.

As part of President Johnson’s Great Society programs, Congress passed the Higher Education Act of 1965, which created federal scholarships and low-interest loans for college students, and subsidized colleges directly. Separate education bills enacted that same year provided similar assistance to dental and medical schools.

Government policy in higher education today consists primarily of federal loans for college tuition, Pell grants which provide up to \$5,550 for tuition, and state support for 4-year and community colleges. The continued heavy federal and state subsidy of colleges has been associated with continued increases in college matriculation. Enrollment in college increased by 11% between 1990 and 2000 and another 37% between 2000 and 2010, to 21.0 million

students. The proportion of the population graduating from a 4-year college has not risen, however, and remains about 40% of the adult population, placing it outside of the top ranks worldwide. President Obama has stated a goal of regaining the top rank in the world by the year 2020. As the cost of a 4-year college education increases more rapidly than the cost of living, many citizens have begun to question whether a college education is worth the expense. Furthermore, the laser focus of state legislatures on balancing their budgets has led to questions about whether government support should emphasize the liberal arts versus job skills training and how the value of a college education should be measured.

### ***Housing***

Like so many other areas of federal social policy, the federal government first entered the housing field during the Great Depression. Legislation in 1934 created the Federal Housing Administration and, among other provisions, provided funds for housing construction loans. Then in 1937, legislation brought the federal government directly into low-rent housing by requiring states to establish local public housing authorities (PHAs) to administer federal funds intended for low-rent housing. The most pertinent legislation for understanding current housing policy was the Housing Act of 1974 that created Section 8, a program that provided rental subsidies for the poor to obtain housing in the private sector. The federal government now plays a modest role in providing subsidies for construction of housing for the poor, more or less following the philosophy that if low-income people have money to rent, the market will provide enough units at the right price. However, units built under previous federal housing programs and operated by PHAs or private companies continue to provide some affordable housing.

Although Section 8 dominates federal housing policy today, as is typical of other types of federal means-tested policy, housing programs have proliferated over the years and now include 17 separate programs that attempt to develop local communities, help house individual groups such as Native Americans and the elderly, provide assistance to the homeless, help meet the housing needs of people with AIDS, and subsidize water and waste disposal in poor communities. Despite the existence of so many housing programs, of the \$46.3 billion spent by the federal government on housing in 2011, 55% is spent on Section 8 programs and public housing. Around 4.9 million low-income households received federal housing assistance in 2011 (Center on Budget and Policy Priorities, 2012).

A remarkable feature of federal housing programs is that they show impressive evidence of how government can learn from its mistakes and improve the effectiveness and efficiency of its programs. A good example of this achievement of federal policy is furnished by the movement away from government investments in construction of low-income housing to boost supply and investing instead in subsidizing low-income individuals and allowing them to find their own housing. Nearly half of federal spending on housing programs now takes the form of vouchers or voucher-like mechanisms to subsidize the cost of rental housing in the private market, provided that the housing meets moderate quality standards. It is widely believed that use of vouchers is the most efficient use of federal housing dollars (Olsen, 2008). A second example of federal learning is provided by the destruction of high-rise public housing in favor of small and dispersed housing units, often supported by individual vouchers. Experiences with the high crime and danger that seemed endemic to high-rise housing convinced federal officials that placing hundreds or thousands of the poor in concentrated spaces was bad policy, especially given the large number of adolescent males who live apart from their fathers with little supervision. As a result, many high rise units have literally been subjected to treatment by dynamite. Changes in federal housing policy, especially Section 8 rental housing, now result in the poor being spread out rather than concentrated in contagion-inducing mega-unit housing. Even so, housing units receiving federal support, both through public housing and vouchers, are still too concentrated in high-poverty neighborhoods in inner cities (Turner & Kingsley, 2008).

### ***Social Services***

Social services include a broad array of programs that range from child care to homeless grants, to legal services, to emergency food and shelters, to care for children in foster care and adoption. Of the nine programs classified as social services by the Congressional Research Service (CRS), three are especially important for children and two programs not classified as social service by CRS deserve mention. Two of these programs subsidize child care for children in low-income families. The Child Care and Development Block Grant, created by the welfare reform law of 1996, was intended to give states more money and more flexibility in how the money is used to purchase child care for low-income parents. In order to obtain their funds, states must enact minimum child care standards, give parents a choice of using the type of child care they prefer,

and allow only low-income parents to receive the subsidies. Congress has expanded the Block Grant on several occasions by adding more money. The Block Grant now provides states with about \$5.2 billion per year to pay for child care although 4% of the annual funds must be used by states to improve the quality of care in the state. In addition to the block grant, the second source of federal funding for child care is money from the TANF program that federal rules allow to be spent on programs that help low-income parents work, including payments for childcare. It is estimated that states used about \$5.5 billion to purchase child care with TANF funds in 2011 (Schott, Pavetti, & Finch, 2012), bringing total federal funds from these two sources for child care to nearly \$11 billion. Despite these funds, states have only enough funding to help perhaps 20% of income-eligible parents with their childcare bill. Research shows that poor and low-income parents who do not receive government subsidies to purchase care while they work use up to 20% of their income for childcare, thereby creating a major inequity in federal funding of childcare (Forry, 2009).

A third service program that provides help to children is the Social Services Block Grant, which provides states with \$1.7 billion to use at their discretion on a range of social services that include child care, child protective services, case management, housing, foster care, and many others. One or more states use these funds on nearly all the permissible services, but the most frequent use of the Social Services Block Grant funds is to pay for child care.

Another social service that plays a vital role in the nation's social policy for children is a complex series of programs that subsidize state systems that deal with child abuse and neglect. As this chapter has shown, each year there are 6 million reports of possible child abuse or neglect made to child welfare agencies. Around 3.6 million of these reports are judged to be credible enough to investigate and about 1.1 million of the children and families reported wind up receiving some child welfare services (Stoltzfus, 2012). The services range from a very light touch such as a meeting with a social worker to government removing children from their home and placing them in foster care. On any given day, there are about 425,000 children in foster care, many of whom have been there for a year or more and there is a great deal of turnover in children entering and leaving foster care (Stoltzfus, 2012). Many of these cases are tragic and many of the children involved are in situations that are threatening to their mental and often physical health. More than 1,500 children died from maltreatment in 2011, usually at the hands



of their parents (U.S. Department of Health and Human Services, 2012).

### *Employment and Training*

Over the years, the federal government has greatly reduced both the number of employment and training programs for the poor and spending on the programs. In the 3 years from 1978 to 1980, the average federal spending on training and employment programs was \$56.8 billion per year in 2011 dollars (Domestic Social Policy Division, 2006). By contrast, spending in 2011 was a mere \$6.5 billion. Employment and training is one of the few areas of the federal budget in which federal spending has declined substantially. Despite the decline in spending, the major purpose of federal employment and training programs has been more or less constant over the years; namely, to help the disadvantaged improve their skills, increase their work experience, and find employment and thereby promote earnings and self-sufficiency (CRS, 2012; Spar, 2006).

The Congressional Research Service counts eight major employment and training programs today, but only three of these spend even a billion dollars a year. These three programs are the TANF program, the Job Corps, and the Youth Service Activities program in the Workforce Investment Act (WIA). The TANF program is actually a block grant that provides states with \$16.5 billion per year to spend to help the poor achieve self-sufficiency. States can spend block grant funds for any purpose reasonably construed to promote self-sufficiency including cash or in-kind welfare, employment and training, work, nonmarital birth reduction, and marriage-promotion or education. In 2010, states reported spending \$3.9 billion on work-related activities (Schott et al., 2012) in their attempt to help adults, primarily mothers, leave or stay off the TANF cash program by working. States use most of the TANF funds they spend on employment and training to help recipients find jobs rather than on programs that provide them with training.

At \$1.7 billion, the second most well-funded program is the Job Corps, an original War on Poverty program. Low-income youth between the ages of 16 and 24 who are school dropouts, runaways, foster children, or deficient in reading, math, or computer skills are eligible for the program. The Job Corps is an expensive program because it places youth in residential facilities to provide basic education, vocational skills training, counseling, work experience, and health services. Young people who enroll in the Job Corps can stay in the program for up

to two years, but the average stay is 7 months. The Job Corps was subjected to a randomized controlled trial that followed participants for 4 years after assignment to the program. The original evaluation was encouraging because it showed about a 12% increase in earnings for the treated group. A benefit-cost analysis, based on the assumption that the earnings increases would continue, found that the cost to taxpayers was only \$3,000 per participant but the gain to participants was \$20,000 over their lifetime (Mathematica, 2001). Unfortunately, a follow-up evaluation based on earnings data 3 years later found that earnings gains had deeply eroded and the program costs exceeded program benefits (Schochet, McConnell, & Burghardt, 2003).

The third biggest program, with a budget of about \$1 billion, is the youth activities program of the Workforce Investment Act. A national evaluation of a predecessor program (the Job Training Partnership Act) found modest effects in helping disadvantaged youth obtain a high school diploma or GED, but no effect on earnings (U.S. General Accountability Office, 1996).

There is widespread recognition of the fact that, due in large part to the growing role of technology and international competition in the American economy, an increasing share of jobs require education beyond high school (Goldin & Katz, 2008). Many in the scholarly world and even some policymakers are calling for more government spending on apprenticeship programs and programs that prepare young people for jobs available in local economies because they might be able to boost the employment and earnings of disadvantaged youth (Lerman, 2013). Recent experimental programs that provided short-term training to disadvantaged youth for available jobs that require skill and training have shown positive and substantial impacts on employment and earnings (Maguire, Freely, Clymer, Conway, & Schwartz, 2010). Perhaps taking heart from these and similar findings, the Obama administration has launched two evidence-based programs that attempt to work with community colleges and the nation's workforce system to find more effective ways to use existing programs to boost the skills and job preparation of disadvantaged youth. These initiatives, which are being thoroughly evaluated, should begin to produce findings by 2014 or 2015. The era of making minimal government investments in the tier of education and training programs between high school and 4-year colleges is under challenge. Given the pressures on the federal budget, whether these programs can win additional funding seems doubtful.

## THE SCHOLARLY STUDY OF GOVERNMENT POLICIES FOR CHILDREN

Decision making about the programs described above is influenced by many factors that include values and politics but also, to some extent, developmental science and related scientific inquiry. In the 1960s, scientific research played a role in buttressing the case that social programs could provide a way for poor children to become successful. Federal support for social programs brought with it funding for rigorous evaluation of impact and, thus, the creation of nonprofit research agencies such as Westat in 1963, Mathematica in 1968, and MDRC in 1974.

The major child program in the War on Poverty was Head Start, which was shaped by Sargent Shriver's visit to the Early Training Project (Gray & Klaus, 1970) at Peabody College in Nashville, Tennessee. This intervention included both home visits and classroom curricula and was evaluated through a randomized controlled trial to demonstrate its positive impact. Related early childhood interventions for children living in poverty that were evaluated by randomized trials included the Abecedarian Project at the University of North Carolina (F. A. Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002) and Michigan's Perry Preschool Project (Schweinhart, Barnes, & Weikart, 1993). Although Head Start was based in developmental science, it was not subject to a randomized trial in its first 30 years, and uneven implementation across sites probably led to uneven impact.

A second factor stimulating the growth of the scholarly study of government policies for children was the initiation of population-based cross-sectional and longitudinal surveys. National survey data allow policy makers and scholars to know basic demographic facts about the U.S. population, population trends, and specialized facts about social status such as drug use, school dropout, teen pregnancy, use of child care, and a host of others topics. The Panel Study of Income Dynamics (PSID) was initially funded by the Office of Economic Opportunity in 1968 (and now by the National Science Foundation) to survey a nationally representative sample of over 18,000 individuals living in 5,000 families in the United States. Repeated PSID surveys have collected data on employment, income, wealth, expenditures, health, marriage, childbearing, child development, and education, and more than 3,000 journal articles, dissertations, and book chapters have been published using PSID data. The National Longitudinal Survey of Youth has followed a sample of over 12,000 individuals

born in the 1950s and 1960s, and their offspring, initially to understand labor market activities but now to understand other aspects of child development. Monitoring the Future provides both annual cross-sectional surveys of adolescent health-risk behavior and longitudinal investigation of cohorts of adolescents followed into adulthood. Many other longitudinal samples have been funded by other federal agencies, including the three samples in the Early Childhood Longitudinal Study (ECLS), the American Community Survey, the Current Population Survey, the Survey of Income and Program Participation, the National Health Interview Survey, and the National Longitudinal Survey of Adolescent Health (Add Health). These surveys and the growth of administrative data sources have enabled annual reports about the well-being of children, such as the Annie E. Casey Foundation's Kids Count state-by-state tracking of child well-being and the Foundation for Child Development's Child Well-Being Index.

A third factor in growing child and family policy research was the creation of policy research centers and large contracts with federal and foundation funding sources as well as university support. These centers differ from basic science centers in their mission of evaluating policy and their accountability to policy agencies in the government. The Assistant Secretary for Planning and Evaluation of the U.S. Department of Health and Human Services has funded grants to support research and evaluation of important social policy issues associated with the nature, causes, correlates, and effects of income dynamics, poverty, individual and family functioning, and child well-being. Other centers have been funded by the Department of Housing and Urban Development, the National Institutes of Health, and the U.S. Department of Education.

These efforts pale in comparison to research and development (R&D) support in other sectors such as health and energy. Although the United States historically spends about 2% to 3% of its gross domestic product for research and development, this figure varies greatly across sectors. Within the health, transportation, and energy sectors, expenditures for research exceed 2% of all expenditures, whereas less than 0.3% of educational expenditures and less than 0.3% of expenditures for children go to research (Grissmer, 2003). The reasons for this disparity include the (false) popular belief that policy for children is adequately based in common sense, the (falsely) perceived low quality (and less relevance) of research in this domain, the lack of a private market for the education and child policy sector, and the dispersed network of

service providers and funding for education and children (Grissmer, 2003).

### Data Sources

In contrast to a focus on the individual child, the goal of policy scholarship is to measure, understand, and manipulate the population score on important outcomes in child well-being.

#### *Use of Administrative Data in Research*

One hope for improvement in the child policy research infrastructure is the growth of administrative data bases on children, such as electronic birth records, Medicaid health insurance and other government service utilization documents, education records, criminal records, military records, and income tax files. Although these data bases were not funded primarily for research purposes, ethical and legal challenges are being surmounted so that they can be shared with researchers. Concatenating records into longitudinal databases and linking records across sources afford opportunities for longitudinal studies of the impact of public policies on child development at a fraction of the cost of collecting new data.

One domain in which such data bases are proving important is education. In North Carolina, for example, scholars have collaborated with education officials to extract population data bases on children's progression through schools to build individual-level longitudinal files to understand the impact of educational programs and policies on students' outcomes. Although these data are confidential, FERPA laws (Family Educational Rights and Privacy Act, 20 U.S.C. § 1232g; 34 CFR Part 99) allow the release of identified data to "organizations conducting certain studies for the school" (34 CFR § 99.31). Important findings have emerged from the North Carolina studies, such as the discovery that starting middle school in sixth (rather than seventh) grade is associated with students' later substance use by exposing children at an early age to a high proportion of older, deviant peers (Cook, MacCoun, Muschkin, & Vigdor, 2008), and the finding that school accountability policies that focus on school achievement status rather than growth reduce the reading achievement of higher performing students (Ladd & Lauen, 2010). Similar collaborations between scholars and K–12 education agencies have been forged in Florida, Chicago, and New York.

Even greater leverage is achieved when these educational data files are linked with individual-level data files

from other sources, such as birth records, arrest records, and adult outcome records; when they are linked to community records, such as exposure to environmental shocks including natural disasters or community job loss; and when they are used to evaluate impact of interventions and policies. Miranda, Kim, Reiter, Overstreet Galeano, and Maxson (2009) found that indicators of lead exposure in the paint in apartment buildings predict children's standardized test scores and that this factor accounts for part of the achievement gap between high and low income families. Ananat, Gassman-Pines, and Gibson-Davis (2011) found that the rate of job losses in a community is adversely related to children's subsequent reading and math scores, not only for children whose families lose jobs but also for the entire community. This kind of indirect relation to a child's development would not likely have been discovered by studies of small numbers of families.

Research groups are now building the infrastructure for longitudinal research on the impact of policies on children's development in numerous states and communities, including the Center for Analysis of Longitudinal Data in Education Research (CALDER), the Chicago Consortium on School Research, and an NSF-funded network of scholars and state education policy leaders (Figlio & Dodge, 2012).

#### *Longitudinal Studies*

Complementing the breadth of population-wide administrative data sets is a group of government-supported population-representative longitudinal studies of the same children over time or repeated cross-sectional surveys that provide depth of information about the impact of early policy and program experiences on child development. These studies include the Panel Study of Income Dynamics (PSID), the Current Population Survey, the American Community Survey, the Survey of Income and Program Participation, the National Health Interview Survey, the National Longitudinal Survey of Adolescent Health (Add Health), the National Longitudinal Survey of Youth (NLSY), the Early Childhood Longitudinal Surveys (ECLS–Birth, and ECLS–Kindergarten), and the National Institute of Child Health and Human Development's (NICHD's) Study of Early Child Care and Youth Development and Monitoring the Future. The representativeness of the samples in these studies affords generalization to populations in a way that small laboratory studies cannot.

#### *Laboratory Studies in Policy*

Policy research on children is also conducted through empirical studies in the investigator's laboratory. Because

policy development depends on decisions by key stakeholders, the study of how these decisions are made is important. One strand of research has been devoted to the impact of how concepts in child development and programs in child policy are framed to decision makers (Shonkoff & Bales, 2011). The Frameworks Institute has collaborated with the Center for the Developing Child to produce studies on topics of how concepts such as genetic effects and executive function are most effectively communicated, and which metaphors for child growth and development have the strongest impact on listener understanding and support.

Our understanding of public support for child policies is enhanced through contingent-valuation studies, which assess the public's "willingness to pay" (WTP) for a program. WTP is the maximum amount a person is willing to pay in taxes or other means to receive a good (such as improving the community's high school graduation rate) or avoid some outcome (such as crime). For example, Ludwig and Cook (2001) found that the public's WTP to reduce a gun assault is about \$1.2 million per injury. This approach informs policy making and can be used to test the receptivity the public has for innovative interventions and policies for children.

### Methods of Data Analysis

The study of public policy has championed innovative methods for the analysis of complex data that cross ecological levels. Randomized controlled trials of intervention efficacy and effectiveness remain the gold standard, but of particular importance in policy research are methods to test causality and utility for public interventions and policies that are implemented with large populations in the absence of a randomized experiment. Random assignment is not always plausible in policy implementation, but rigorous evaluation of impact is needed nonetheless. The application of typical regression models falls short because of the likelihood that omitted variables influence both the independent variable (the policy) and the dependent variable (the child's outcome), rendering a correlation as spurious. Several partial solutions have been applied in policy studies (Duncan & Gibson-Davis, 2006).

#### *Regression Discontinuity*

A regression discontinuity design is often used to test the impact of a policy when that policy is applied to a portion of a population based on a pre-treatment threshold or cut-off score, such as a student's past academic performance or family income. The impact of an intervention is tested

by examining cases that fall closely on either side of the cutoff. It was first applied by Thistlewaite and Campbell (1960) to test the impact of scholarship programs on student outcomes. A more recent example by Jacob and Lefgren (2009) compared students who fell on either side of the threshold for grade retention to determine whether the policy of grade retention has adverse impact on the probability that a student will graduate from high school.

#### *Propensity Score Matching*

This method is used to test the causal effects of a policy that is applied in nonrandomized ways to members of a population by creating a comparison group that is similar to the treated group utilizing preintervention characteristics. A regression analysis of preintervention variables is performed to predict which members of a sample participate in a policy or program. Those regression weights are then used to select a separate group that is similar to the treated group except for the treatment itself. Hill, Waldfogel, and Brooks-Gunn (2003) estimated the impact of different types of child care on children's outcomes in the Infant Health and Development Program using this method. Because families self-selected into care, the authors modeled families' child care decisions and then used those regression weights to identify comparison groups of families that were similar in all measured ways except for the child care decision. They found that center-based care led to the best child outcomes that last several years into elementary school.

#### *Fixed Effects Analysis*

Another way to control for confounding factors in testing causal impact is through fixed effects analysis. One example is the sibling design, alternatively called family fixed effects. This approach takes advantage of the variation within a family in the experience of a program such as Head Start. Each sibling's scores on all variables are subtracted from the average scores of all family members before testing the impact of the policy, so that the effect of any unmeasured factor that is common to all members of a family is removed. Currie and Thomas (1995) used family fixed effects with data from the Panel Study of Income Dynamics and the National Longitudinal Study of Youth to determine that Head Start has positive impact on children's developmental outcomes. This method is superior to one of comparing Head Start participants from one family to matched nonparticipants from another family because of the always-present possibility that omitted variables confound these groups. If the important omitted variables



apply to all members of a family, then the family fixed effects design solves this confound. However, this design is still vulnerable to the possibility that within-family differences in program participation are not random and are related to a child's outcomes. Fixed effects analysis can control for differences due to age cohorts, communities, schools, classrooms, and other units that might influence both program receipt and outcomes.

### ***Instrumental Variables (IV) Analysis***

This approach tests the impact of a program by identifying another variable (called the instrument) that is correlated with program participation and is also correlated with a child's outcome but entirely indirectly through program participation. At the first stage of analysis, the effect of the instrument on program participation is modeled. At the second stage, the predicted value of program participation is regressed on the child's outcome. An example comes from a study by Hotz, McElroy, and Sanders (2005) of the impact of teenage child-bearing on life outcomes. The problem with correlational studies of this question is that factors that might lead a teenage girl to become pregnant might also adversely affect later life outcomes such as total years of education or employment, calling into question whether the experience of giving birth to a child during teenage years has any causal impact by itself. Hotz and his colleagues employed miscarriage as a "natural experiment" and instrument that predicted teen child-bearing but could not (presumably) affect life outcomes except through its impact on child-bearing. They found that many of the life outcomes that had supposedly been attributed to having a child as a teenager disappeared in this analysis.

### ***Cost-Benefit (CBA) and Cost-Effectiveness (CEA) Analyses***

Government programs should be evaluated not only by their impact on child outcomes but also by the soundness of their investment and in comparison to other possible investments. In these analyses, the cost of a program is measured for each participant, and the totality of impacts of the program on outcomes is measured, in monetary terms for CBA and qualitative terms for CEA, so that a ratio of costs to outcomes can be computed. Outcomes are considered not only for the dependent variable of primary interest (such as educational success) but also for other outcomes that might be affected both for the participant and for others (such as siblings or other community members). Because the costs of a program are borne immediately but

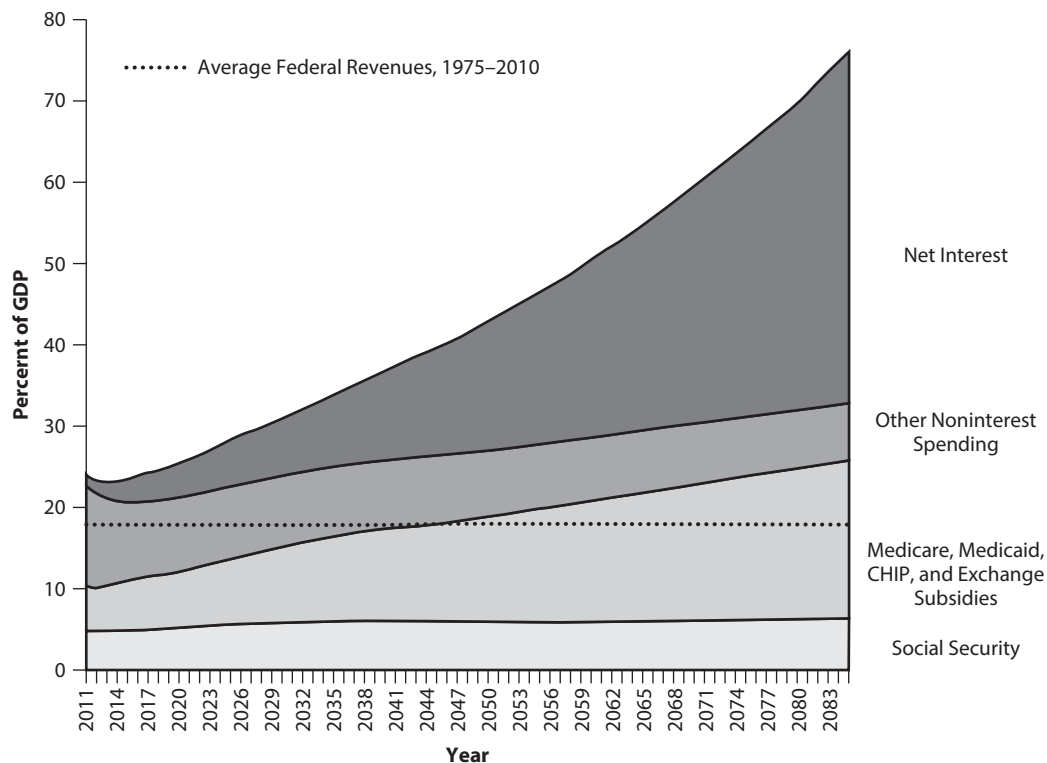
the benefits typically accrue later in time, time discounting is typically applied by a common formula.

The Washington State Institute for Public Policy, led by Steve Aos, is often given credit for popularizing cost-benefit calculations in child policy decision-making. For example, Aos and Pennucci (2013) analyzed 53 evaluations of the impact of classroom size on education outcomes and concluded that reduction in classroom size has a positive cost-benefit ratio for early grade levels but not later grade levels.

## **THE CURRENT DILEMMA OF ECONOMIC AND BUDGET CONSTRAINTS**

The federal budget is seriously out of balance. There is widespread agreement among economists and even most politicians that in the long run the deficit is unsustainable (National Research Council, 2010). Figure 17.12, based on estimates by the nonpartisan Congressional Budget Office (CBO), shows why. Consider three points made clear by the figure. First, as a percentage of the gross domestic product (GDP), under tax and spending policies in place in 2011, federal spending would grow from around 24% of GDP to about 50% of GDP in 2060 and 75% of GDP by 2085. In other words, government spending would equal about half the total value of goods and services produced by the U.S. economy by 2060 and would continue growing rapidly thereafter. Few analysts or politicians doubt that spending could never reach this level because government policies would change long before spending got to 50% of GDP. Second, most of the increase in spending as a percent of GDP has two related causes—the growth of health care spending and the growth of interest spending. The growth of interest spending, in turn, is caused primarily by the fact that the nation's rapidly rising expenditures for health care cause the federal government to borrow unprecedented amounts of money. The borrowing, of course, comes at a price; namely, interest payments. And even under CBO's modest assumptions about future interest rates, interest payments explode, rising rapidly after about 2015 and then even more rapidly later as both health care costs increase and interest payments expand, necessitating more borrowing to pay the interest, creating still higher interest payments, and so on until spending and revenues come closer to balance or a crisis occurs.

Although long-term budget predictions are no more than approximations, the story of expanding deficits and interest payments that are unsustainable under current policies is a



**Figure 17.12** The unsustainable fiscal path, 2011 to 2085.

*Notes.* This series includes 10 spending sources: Medicaid, SNAP, EITC, CTC where credit exceeds tax liability, SSI, AFDC/TANF, Housing Assistance, Medicare Part D Low Income Subsidy, ESEA Title I Grants to Local Educational Agencies, and Federal Pell Grants. Data on the last two are available starting only in 1980 and include approximately \$27 billion in ARRA spending in 2009.

*Sources:* Most spending sources from OMB, Fiscal Year 2013 Budget, Tables 8.5, 11.3, 12.3. Title I and ESEA spending from Department of Education Budget History Table. Medicare data from CMS, 2011 Medicare Trustees Report, Table IV.B11; the number for 2011 is estimated. All figures adjusted to constant dollars using OMB total deflator from historical table 10.1. Data on number of people in poverty through 2010 from U.S. Census Bureau, 2011, number estimated by Richard Bavier.

very high probability. At some point in the deficit and debt spiral, federal spending will have to decline and federal revenues will have to rise. How the nation will be extracted from the deficit spiral remains an open question. There are at least three reasons Americans should be worried about the deficit. The first is that a financial crisis will be precipitated if the federal government reaches the point that it can no longer repay its creditors. As shown in detail by a review of 800 years of economic crises in 66 nations by Reinhart and Rogoff (2009), two virtually certain impacts of a federal default would be a severe and abrupt reduction in government spending, during which many social programs (perhaps especially children's programs) would experience sharp reductions, and a decline in the nation's economic growth that would probably last a decade. No one doubts that a financial crisis precipitated by federal debt is to be fervently avoided. As Winston Churchill said: "Americans can always be counted on to do the right thing—after they

have exhausted all other possibilities." Federal policymakers are still in the process of exhausting alternative possibilities, although they have made some progress in reducing the debt.

A second problem is that as long as the federal government keeps borrowing, interest costs will rise at some point in the future. These first two consequences should be of great concern to the nation, but a third consequence of the deficit is perhaps the most alarming. Consider the process by which Social Security and Medicare are funded. Both are entitlements and are permanently authorized by Congress. Unlike most other federal spending, the budgets for Social Security and Medicare are not even reviewed on a regular basis and Congress does not vote to authorize spending for the benefits on an annual, semiannual, 5-year, or any other regular basis. According to CBO, spending on Medicare will grow from \$551 billion to \$1,079 billion, almost doubling over the next 10 years and this growth will

occur without any action by Congress. In fact, Congress would have to take an action to stop or alter the growth.

Whatever else might be said about the nation's deficit, it seems likely that future spending on programs for children will not enjoy the kind of growth shown in Figure 17.1. In fact, the agreements reached so far on reducing the deficit have already resulted in cuts for Head Start, childcare, housing, and a number of other programs that support children. There are certain to be more cuts in the future unless more progress is made to reduce the long-term deficit.

## TOWARD EVIDENCE-BASED POLICY MAKING

One component of a comprehensive solution to the dual problems of the budget crisis and the dire futures for children in low-income families would be a shift toward evidence-based policy-making that incorporates the best methods and most robust findings of developmental science and policy scholarship. President Obama has vowed to steer program priorities and budget decisions to protect or even provide increased funding for programs that work and decrease funding for or even terminate programs that do not work. If implemented more fully, we believe this approach could improve outcomes for low-income children while increasing the benefit to cost ratios for government use of taxpayer dollars.

The recent case story of home-visiting legislation provides a good example of a shift toward evidence-based policy making for children and families (Haskins, Paxson, & Brooks-Gunn, 2009). Home visiting as a practice to support families with a newborn infant has been around for over a century and is implemented universally in several countries (e.g., New Zealand, Switzerland, Great Britain) and selectively for low-income families in all U.S. states. Home visiting aims to connect parents with a home visitor and other community resources in order to improve parenting and prevent child maltreatment so that child development and well-being improve. Home-visiting programs come in many forms, differing in credentials of the home visitors, curricula implemented, timing across the infant's life span, and target population. Its impact has been touted by advocates but doubted by critics.

Debate about federal funding for home visiting in 2009, like that for many children's programs, was filled with personal anecdotes and political rhetoric by congressional leaders, but especially persuasive was the scientific evidence for one program, the Nurse Family Partnership

(NFP), which was a specialized program limited to low-income, first-time mothers who agreed during the second trimester of pregnancy to participate in a 30-month series of home visits (Olds, Henderson, Tatelbaum, & Chamberlin, 1986). Infants randomly assigned to NFP were less likely than controls to be maltreated and less likely to become juvenile delinquents years later (Olds et al., 1998). Economic analyses indicate that every dollar invested in NFP yields \$2.37 in savings down the road. This argument has been played out by Heckman et al. (2010) who describe the compounding benefits of investments of this sort in early life. President Obama responded by proposing legislation to provide funding for the NFP program because of its strong evidence.

Social scientists immediately weighed in on the debate. They agreed with the empirical support for the NFP and the lack of support for programs that had been found through rigorous trials to be ineffective. But they also noted that at least 10 other programs had rigorous evidence supporting their efficacy, and the proposed legislation did not address the real needs of numerous other groups of families with newborns (such as middle-income families with low-birth-weight infants and low-income families having a second birth), nor did it allow for emergence of other programs that might eventually prove to be equally or even more effective than the NFP. President Obama revised his legislative plan in response to this debate with an \$8.8 billion three-tier proposal. The first tier provided financial support for programs that had passed muster through randomized trials. The second tier provided support for programs that had strong evidence from evaluations that had modest shortcomings. The third tier supported innovative programs that were promising but had limited evidence of effectiveness. After compromise, \$1.5 billion was authorized through 2014 to award three tiers of funding for home visiting programs. Seventy five% of the funds are spent on projects using one of 11 model home visiting programs determined by HHS to have evidence from top-tier evaluations that they produce positive impacts on one or more measures of parenting or child outcomes.

The precedent set by this legislation is enormous, in several respects. First, it indicates that the federal government will sometimes place scientific evidence at "the center of decision making" (according to Office of Management and Budget Director Peter Orszag, cited in Haskins et al., 2009) to determine the merit and funding of one program or policy over another. Thus, scientists and evidence have a place at the decision-making table. Second, it pushes the joint

scientific and policy communities to establish standards for determining whether a program has an evidence base. For example, evaluations based on a randomized controlled trial have greater value than others, and replications across multiple trials are valued more than one trial; but questions remain about determining generalizability of programs to new populations and ways of calculating benefits. Third, it endorses the government's role in providing venture capital to spawn new programs to meet the needs of different populations, and, fourth, it requires that the standards of evidence be applied rigorously to programs as a way to determine future funding. The home-visiting program joins several others promoted by the Obama administration that are models for evidence-based social policy making (Haskins & Baron, 2011).

The Coalition for Evidence-Based Policy in Washington, D.C., headed by Jon Baron, has endorsed the home-visiting evidence-based approach and has succeeded in getting Congress to make numerous other funding decisions based on an objective analysis of the scientific evidence of a program or policy's effectiveness. The Washington State Institute for Public Policy has taken this movement a step further by evaluating not only a program's impact but its cost effectiveness and cost-benefit ratio as well.

The next decade of policy making for children will be improved if it continues these evidence-based and cost-benefit approaches by implementing several elements. First, the basic science infrastructure that spawns the empirical and theoretical basis for children's programs should be preserved and enhanced. Second, the infrastructure for high-quality program evaluation by federal agencies should be expanded, including the administrative data files that enable the follow-up of children over time. Third, the entrepreneurial spirit of innovation should be rewarded through grants and support for innovative programs backed by promising research. Fourth, government at the state and federal level must be willing to engage in randomized trials of programs that show promise but are not yet fully evaluated, in the spirit of Campbell's experimenting society (Campbell, 1998). Fifth, the president and Congress should commit to following the empirical evidence, wherever it leads—including reform or termination of programs that do not work.

Following these principles will lead to more effective outcomes for children and can help in allocating scarce resources to expand successful programs for children and families. These principles are by no means a panacea, but they do represent a strong step toward the integration of

the scientific community into government decision making for children and families.

## CONCLUSION

Government's role in the lives of American children has grown exponentially over the past century, whether measured by the breadth of influence, number of programs for children, or taxpayer dollars spent on children. Although this growth has coincided with measureable improvement in children's well-being, the judgment of whether this reach is positive or negative has depended in large part on political philosophy. Likewise, policy-setting for children has been based largely on politics. We propose a transformation in the evaluation of government effectiveness toward an empirical analysis of evidence using standard rules of science, and in policy-making toward evidence-based practice. With support from scholars and advocacy organizations, President Obama has made the use of evidence a basis for policy decision making in domains such as infant home visiting, teen pregnancy prevention, education, employment and training, and community-based services for young people. Randomized controlled trials are the gold standard in program evaluation and should be used whenever possible as part of the policy-making process. We envision a golden era of scientific contribution to policy for children and families. The result will be continuing improvement in the effectiveness of policies and programs for children and families. Developmental scientists should play a central role in this process.

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## CHAPTER 18

# Children in War and Disaster

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## INTRODUCTION

Children always have been exposed to the devastation wrought by human warfare and natural disasters, yet the systematic study of mass-trauma experiences emerged surprisingly late in the history of developmental science. World War II spurred concerns about the effects of war on children as many communities and nations responded to millions of children threatened by bombing of civilian populations, starvation, displacement, persecution, death camps, and the effects of widespread destruction and death on family life. Clinicians and researchers began to examine and describe the effects of war on children. After World

War II, research on adversity and mental health surged and a sequence of highly publicized disasters underscored concerns about the effects of mass-trauma events on child development.

Initially, reports on children in war and disaster were sparse. In the first *Manual of Child Psychology*, published shortly after World War II, war was mentioned only briefly. In his chapter titled “Emotional Development,” Jersild (1946) commented: “Findings with respect to the responses of children at various levels of maturity to acute dangers such as prevail during air raids are as yet too meager for anything but tentative generalizations” (p. 764). In the ensuing decades, research on children in war and disaster expanded and reviews emerged in influential compendiums of child psychology and psychiatry (e.g., Garnezy & Rutter, 1985). The 2006 edition of this *Handbook* included a chapter on “Children and War Trauma” (Klingman, 2006).

Since the turn of the 21st century and the World Trade Center terrorist attack on 9/11 in 2001, children and

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This chapter is dedicated to all of the participants, investigators, and funders around the world who have made it possible to study risk and resilience in young people experiencing war and disaster. We especially want to pay tribute to the families and young people who shared their stories so that others could learn better ways to prepare for such devastating experiences and promote resilience.

families around the world have experienced terrifying mass-trauma events, including the complex trauma and upheaval wrought by destructive storms, earthquakes, terrorist attacks, war, and intense political violence. The numbers of children affected directly and indirectly by such catastrophes are staggering. The United Nations (UN) estimates that over 25 million children live in “conflict-affected poor countries” (UN, 2012) and in 2011, UNICEF (2011) estimated that disasters affect up to 175 million children every year. Recent estimates of children displaced by violent conflicts and disaster are approximately 16 to 18 million; one third of the children are international refugees or asylum-seekers and two thirds are internally displaced (Drury & Williams, 2012; Reed, Fazel, Jones, Panter-Brick, & Stein, 2012; UN High Commissioner for Refugees [UNHCR], 2010). In 2011, about 34% of 895,000 international asylum-seekers were children and 17,700 of these children were unaccompanied or separated from their caregivers (UNHCR, 2012a, 2012b). Children separated from their caregivers during conflict also can be vulnerable to forced enlistment as child soldiers. In 2012, UNICEF estimated there were 300,000 child soldiers.

This chapter is focused primarily on research of the 21st century, although we summarize key findings from 20th-century research. The chapter focuses on studies of children under 18 and their families, although we also include key studies of young people in the transition years between adolescence and adulthood (late teens to late 20s). We highlight developmental research on children experiencing the mass-trauma experiences of war, violent political conflict, terrorism, major technological accidents, and natural disasters.

Our overall conceptual framework reflects a risk-and-resilience approach, the prevailing perspective in this literature (Masten & Narayan, 2012). This approach is grounded in relational developmental systems theory (e.g., Overton, 2013; see Overton & Molenaar, Chapter 1, this *Handbook*, Volume 1) and contemporary developmental psychopathology (e.g., Cicchetti, 2013a). Human adaptation and development are presumed to arise from countless interactions across many levels of function, within the organism and between the organism and environment, from the molecular level to the level of culture, media, and the wider ecology of life. Mass-trauma experiences require consideration of many systems beyond the individual child, family, peer group, and school because these experiences often are defined by their extensive scope and breakdown across multiple systems simultaneously (Masten & Obradović, 2008). Consequently, these situations emphasize the profound

interdependence of human adaptation and development on the function of many other systems. Furthermore, the risks and the protections involved in mass-trauma experiences depend on the complex roles of large scale systems, such as national emergency response systems, weather patterns, and government systems, and the functions of proximal social microsystems in the child’s immediate life, such as family, peers, and school. The specific implications of these broad, conceptual perspectives are delineated further in the theoretical section of this chapter.

This chapter is divided into five sections. In the introduction, we highlight historically important research and describe the challenges of research on children in extreme situations of mass trauma. The following section describes major theoretical perspectives that inform and drive this literature. Then we selectively review empirical findings on mass-trauma experiences in two sections, one focused on violent political conflicts, including war, terrorism, and prolonged political conflicts, and the second focused on natural and ecologically extensive disasters, including technological accidents. These sections include promising research on assessment and intervention. In the final section of the chapter, we draw conclusions about the overall state of the evidence, gaps and limitations in the literature, and implications for future research, practice, and policy. The chapter closes with a call to action for developmental scientists to participate in global preparedness for mass trauma and recovery.

## Historical Perspectives

Before World War II ended, Anna Freud and Dorothy Burlingham (1943) published a volume titled *War and Children* that was based on their clinical observations and case studies. In what has become one of the most replicated conclusions about children in war and disaster, they noted that “traumatic shock” was rarely observed in children when they were in the care of mothers or mother surrogates. In contrast, trauma reactions often were observed when children were lost or separated from parent figures during wartime, for example during the Blitz (Garmezy, 1983; Garmezy & Rutter, 1985). Over a million children were evacuated from cities and towns in Great Britain to safer locations in a monumental effort to protect children from life-threatening bomb attacks (Foster, Davies, & Steele, 2003; Welshman, 2010). However, many children apparently showed such severe adverse reactions to the separations that they were returned to bombing zones to be reunited with their families. Some of the evacuated children



also may have been exposed to violence, maltreatment, and/or sexual abuse (see Welshman, 2010; Yule, 1994).

Anna Freud and other clinicians also were involved in interventions to help orphaned children from liberated concentration camps. Detailed observations of children from the Terezin camp were published by Freud and Dann (1951). They described dramatic improvements in the children over time, but also notable signs of lingering effects, termed “sensitization” or psychological “scarring.” This mixed picture of recovery after experiences of prolonged, severe trauma or deprivation continues to be noted in more recent studies of rescued child soldiers and children adopted from institutions providing extremely poor care, described further below.

During the last three decades of the 20th century, a series of disasters captured international attention. One of the most influential and well-documented disasters occurred in 1972 when a coal slurry impoundment dam above the mining community of Buffalo Creek in West Virginia gave way and flooded the hollow below, killing 125 people and injuring many others (Erikson, 1976; Gleser, Green, & Winget, 1981; Green et al., 1991). Documenting effects of this disaster over time on children and adults in the community was part of a litigation process, which raised concerns about bias in the findings. However, many of the critical observations from Buffalo Creek have been widely replicated, including their observations of symptom variations related to age, sex, and exposure severity. Moreover, there was an unprecedented 17-year follow-up study (Green et al., 1994; Korol, Kramer, Grace, & Green, 2002) indicating that dose effects had largely dissipated, although survivors still showed higher current and lifetime rates of posttraumatic stress disorder (PTSD; 7% current; 32% lifetime) than a comparison sample (4% current; 6% lifetime). After such a devastating tragedy that essentially destroyed the community, higher than normative rates of PTSD, especially for lifetime diagnosis, might be expected; however, it was notable that resilience and recovery was observed in the majority of the exposed individuals.

Another large scale disaster with extraordinary documentation of short- and long-term consequences is the 1983 Australian bushfire. Initially, McFarlane (1987) compared symptoms in over 800 fire-exposed children in primary schools in the fire zone with a group of 725 children recruited in 1985 from a neighboring region not directly affected by the fire. Although child symptoms were related to dose of exposure as would be expected, child symptoms were more strongly predicted by maternal separation or maternal symptoms than direct exposure.

After 20 years (McFarlane & Van Hooff, 2009), some dose effects remained but they were small in magnitude.

Children were also studied following two 20th-century commercial nuclear accidents at Three Mile Island and Chernobyl. In 1986, in the worst of these accidents, the Chernobyl nuclear plant exploded, spreading radioactive dust over an extensive area (Wroble & Baum, 2002). Initially concealed by authorities, subsequent data indicated that the radiation was 200 times greater than the radiation released by bombs at Hiroshima and Nagasaki combined. Families in the area were evacuated, relocated numerous times, and forced to live with uncertainty about the extent of the exposure, which contributed to chronic and often severe stress. It has been difficult to document effects of this disaster for many reasons, but there are reports of both psychological and physical consequences in exposed children (Bromet & Havenaar, 2007; Fushiki, 2013).

One of the clear effects on children documented after Chernobyl, consistent with studies after Hiroshima and Nagasaki, was differential timing effects of radiation exposure on health and development (Fushiki, 2013). The Chernobyl accident spread radiation in the form of radioactive iodine, resulting in high doses of radiation accumulation in the thyroids of born and unborn children. Higher rates of thyroid cancer were reported as the children grew up. One of the ways that the radiation pervaded families was through drinking milk from radiation-affected cows. Evidence indicates that fetal exposures have the greatest effect during organogenesis and early fetal development; the fetus is particularly sensitive to radiation exposure in the 8- to 25-week gestation period. Dose effects are related to timing and degree of exposure.

Chernobyl also generated a massive fear vector in neighboring countries due to uncertainties about the spread of radiation. Years later, a national study of twins in Finland was able to utilize the known timing of the Chernobyl accident to carry out a natural experiment comparing adolescent development in twins who were in gestation in 1986 during Chernobyl with twins born a year later (Huizink et al., 2008). Findings suggested lingering biological effects related to prenatal stress exposure, not attributable to radiation, and consistent with programming effects on the fetus. For example, levels of salivary cortisol, a hormone involved in stress-regulation, were significantly higher among adolescent offspring of mothers pregnant during Chernobyl. These timing effects also suggested greater vulnerability beginning in the second trimester.

The Three Mile Island and Chernobyl nuclear accidents and the poorly managed geopolitical response raised global

concerns about the perceived safety of nuclear energy and the credibility of government reports on meltdowns. Nuclear accidents can induce intense fears about invisible dangers carried through the atmosphere or groundwater, such as radiation poisoning, birth defects or delayed cancers. Additional problems include chronic stress engendered by the evacuation context and uncertainty about the accuracy of government information. These issues would surface again when the Japanese nuclear plant at Fukushima Daiichi failed following the earthquake and tsunami that struck Japan in March of 2011.

Other important studies were conducted following five disasters clustered between 1987 and 1992. The *Herald of Free Enterprise* ferry sank in 1987 with 459 passengers and 80 crew on board (193 died, including seven children), and the *Jupiter* cruise ship sank in 1988 after it was struck by a container ship, with a group of 400 British adolescents on board for a school trip (one student and one teacher died). In a series of publications in the 1990s, Yule and colleagues documented the level of posttraumatic stress symptoms and disorder in children and teenagers, ascertained by direct clinical interviews and questionnaires with survivors (Yule, Udwin, & Bolton, 2002). Yule and colleagues were among the first investigators to document systematically the extent of trauma reported by children and adolescents. To this day, investigators and clinicians report that adults often underestimate trauma symptoms and stress in children and adolescents compared to what youth report for themselves (Masten & Narayan, 2012).

Yule and colleagues also compared survivors with students from the same school who were either unable to go on the trip although they wanted to go or who had never wanted to go. They reported a dose-response gradient of highest symptoms for survivors, followed by the “near miss” group, followed by the students who never wanted to go but were in the same school, with the lowest symptom levels found in a control school uninvolved in the trip (Yule et al., 2002).

On December 7, 1988, a severe earthquake struck northern Armenia, killing over 25,000. The timing and location of the earthquake resulted in many deaths and injuries to children who were in school at the time. Many schools were destroyed in the city of Spitak, located near the epicenter, and in some schools more than one-half the children were killed. One and a half years after the earthquake, Pynoos et al. (1993) compared symptoms and rates of PTSD among 231 children (Ages 8 to 16) located in three different cities at various distances from the epicenter. This was one of the earliest natural disaster studies to both employ a child self-report measure of posttraumatic stress and diagnose

child PTSD based on a clinical interview that applied new criteria for PTSD adopted by the American Psychiatric Association (1987). Child reports of trauma symptoms were strongly related to a PTSD diagnosis. Rates of PTSD also were over 90% in high-exposure locations.

Another study by the same team (Goenjian et al., 1997) examined the effects of an intervention on a sample of young adolescents exposed to the earthquake, with pre- and postintervention assessments. A 5-year follow-up indicated sustained treatment effects compared with untreated adolescents. Although this intervention did not utilize the gold standard, a randomized controlled trial (RCT), it was an influential demonstration that intervention research was feasible in schools after major disasters.

Hurricane Hugo, which struck South Carolina in 1989, and Hurricane Andrew, which struck South Florida in 1992, are historically important in providing early evidence that severe storms lead to symptoms of PTSD in a substantial proportion of children (e.g., La Greca, Silverman, Vernberg, & Prinstein, 1996; Lonigan, Shannon, Finch, Daugherty, & Taylor, 1991; Shannon, Lonigan, Finch, & Taylor, 1994; Vernberg, La Greca, Silverman, & Prinstein, 1996). These studies found moderate symptoms of PTSD in approximately 30%–50% of youth (full diagnostic criteria were met for 5%–10%). “Reexperiencing” symptoms (e.g., intrusive thoughts or dreams about the disaster) were the most common and “avoidance” or “numbing” symptoms were the least common symptoms reported. PTSD symptoms declined over the first year for the majority of children but persisted for about one third (e.g., Shaw et al., 1995; Swenson et al., 1996). La Greca, Silverman, and Wasserstein (1998) provided rare evidence that predisaster characteristics, particularly high anxiety, predisposed children to more severe disaster reactions over time. This finding was later replicated in children exposed to Hurricane Katrina (Weems et al., 2007).

### Conclusions From Early Reviews

Numerous other prominent incidents were studied by the end of the 20th century, including the Oklahoma City bombing. Soon the growing literature produced a series of influential reviews by some of the most prominent scientists and clinicians of the time (e.g., Eth & Pynoos, 1985; Garnezy & Rutter, 1985; Jensen & Shaw, 1993; La Greca, Silverman, Vernberg, & Roberts, 2002; Norris et al., 2002; Norris, Friedman, & Watson, 2002). These reviews reached conclusions that the next generation of studies would corroborate, including the following: (a) Dose of exposure was related to perceived stress, PTSD, and other aspects of

adjustment; (b) older children often had greater exposure and more trauma symptoms; (c) more anxiety and depression symptoms were found among girls (particularly adolescents), while more aggression or disruptive behavior was observed in boys; (d) child responses were related to cumulative risks and protections; (e) loss of effective parenting posed considerable risk; (f) severe and prolonged trauma had worse and more lasting effects; and (g) trauma symptoms decreased over time, with recovery and resilience common over the long term. Although these reviews noted the paucity of intervention research, there also were hints that advance preparation and stress-inoculation strategies had value in contexts where repeated exposure to the same experience was likely (e.g., areas prone to hurricanes or conflict). Finally, numerous observers suggested that children responded well after disaster to efforts for normalization, such as resuming family routines and school.

### The Challenges of Research on War and Disaster

Over time, reviewers have recognized the challenges facing investigators in the context of massive trauma experiences, both in the midst of an unfolding catastrophe and during recovery (e.g., Bonanno, Brewin, Kaniasty, & La Greca, 2010; Masten & Narayan, 2012). There are profound issues and dilemmas involved in ethical conduct of research during times of great pain, loss and suffering, and under field conditions that may be fraught with chaos and ongoing danger for both the potential participants and researchers. Careful consideration must be given to the possibilities of harming already traumatized parents and children and traumatizing the researchers through secondary exposure. Traumatized parents also may be understandably protective of their children and reluctant to trust unfamiliar researchers.

Furthermore, there often are issues of informed consent when research is conducted in cultures or communities who are unfamiliar with research protocols and risks. Methodological and ethical concerns also arise from applying measures and theories developed in different cultures or contexts and thus may have unknown psychometrics relating to reliability, validity, and measurement equivalence. In intervention science, where an RCT is the optimal design for causal inference, there may be practical and/or ethical issues that render systematic measurement and random assignment to treatment conditions, and particularly to comparison control conditions, untenable (Masten & Narayan, 2012).

In addition, disaster and warfare frequently destroy or damage infrastructure systems for research, such as communication, safety, food supplies, medical systems, computer systems, and postal services. Oftentimes, the most impoverished areas, already lacking resources, are affected the most by disasters due to geographical vulnerabilities (Narayan & Masten, 2012).

Also, rarely do data exist on preconflict or predisaster functioning of the children or families such as the type reported by La Greca et al. (1998) and Weems et al. (2007). Without baseline data, it is difficult to know whether observations of individuals represent either preexisting behaviors or effects of exposure. Comparison groups with less exposure to the mass trauma event can be studied, although this strategy may not solve the causal inference problem. Additionally, exposure dose in war and disaster often is nonrandom, which complicates recruitment of suitable, “matched” comparison groups.

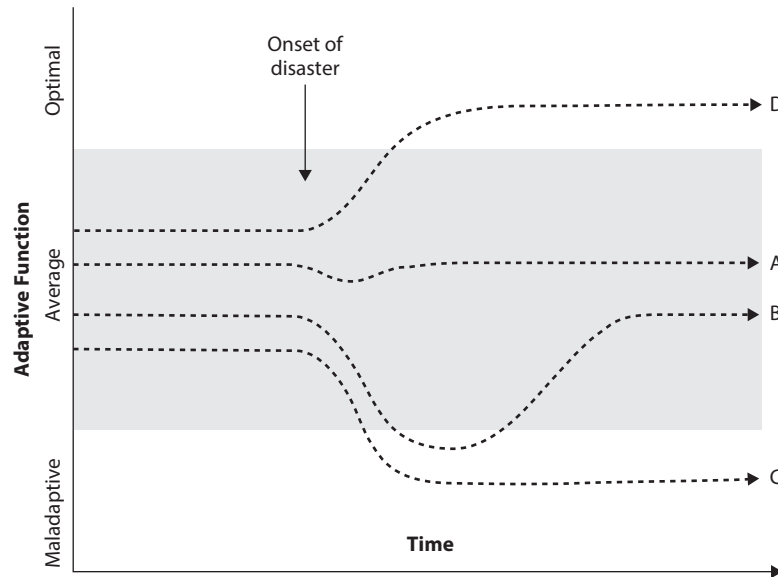
Longitudinal studies that follow war or disaster survivors, whether focused on the natural recovery course or intervention effects, are difficult to implement and remain rare, although their numbers are increasing (Masten & Narayan, 2012). The scope of these events can generate long-lasting chaos and communication problems that hinders following participants over time. The displacement, which commonly follows disasters, may compound the challenges of conducting longitudinal work (Fazel, Reed, Panter-Brick, & Stein, 2012; Reed et al., 2012). Nonetheless, it has been possible in more economically advantaged countries to track postdisaster effects by following samples of affected children for longitudinal data of traumatic events, such as 9/11 (e.g., Silver, 2011).

Finally, because it is not possible to predict situations of mass trauma events, funding may be difficult to obtain in a timely fashion. There also may be limited resources for research in remote locations, and funders may be skeptical about the ethics or feasibility of the research.

Despite all these challenges, there has been progress (e.g., Barber & Schluterman, 2009; Betancourt, Borisova, et al., 2013; Masten & Narayan, 2012). Many findings are consistent, and the quality of the literature has improved in notable ways highlighted in this chapter.

### THEORETICAL PERSPECTIVES

The study of children in mass-trauma experiences is focused on both typical patterns of response and recovery and individual differences. Over the decades, this body



**Figure 18.1** Pathways of response to mass-trauma events commonly described in the literature.

A = stress-resistance; B = disturbance with recovery; C = breakdown without (yet) recovery; and D = posttraumatic growth.

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of research has become increasingly developmental in perspective. Moving beyond initial attention to age and sex differences, work in this area now considers developmental timing effects related to exposure and response. There also is concern with sensitive periods, when children may be more vulnerable to exposure and the biological embedding of experiences. Concepts from developmental psychopathology and resilience science have influenced the perspectives of investigators and practitioners who work with children exposed to war or disaster (e.g., Franks, 2011; La Greca & Silverman, 2006; Masten & Narayan, 2012). Research and practice also reflects the assumptions and concept from relational developmental systems theory, which infuses contemporary theories on risk and resilience (see Cicchetti, 2013b; Lerner, 2006; Lickliter, 2013; Masten, 2013; Sameroff, 2010; Zelazo, 2013). In this section we highlight concepts that currently play a central role in theory and research on children in war and disaster.

### Pathways

The effects of disaster or trauma are often portrayed as pathways, marked by an acute or chronic experience of extreme disturbance triggered by the traumatic exposure. These are usually abstract models illustrating different patterns of response and recovery that individuals are believed to follow in the aftermath of major life threats. These paths reflect the overall level of functioning of one

or more individuals, showing patterns of adaptive or maladaptive function over time. Disasters often have an acute onset, although the aftermath may be either short-lived or prolonged, whereas chronic experiences, such as war, often have gradual beginnings and endings. Contemporary scholars differentiate response patterns for relatively acute versus chronic situations of mass trauma (see Bonanno & Diminich, 2013; Masten & Narayan, 2012).

Figure 18.1 illustrates a set of theoretical pathways commonly described in the context of a relatively acute onset mass trauma event (Bonanno, 2004; Kronenberg et al., 2010; Masten & Narayan, 2012). Four patterns are illustrated: (1) *stress-resistance*, when the person continues to function well (in the adaptive zone) following an acute threat; (2) *disturbance with recovery*, when adaptive function is disturbed for some period and then returns to normal levels; (3) *breakdown without recovery*, when the individual is affected and has not recovered (at least not yet); and (4) *posttraumatic growth*, when adaptive function improves in response to the threat. Breakdown can occur immediately after exposure or after some time delay, as the stress load increases (from prolonged adversity) or the adaptive capacity of the person is depleted.

There is some debate about how to label some of these patterns. For example, in the case of pattern B, there is disagreement about whether to distinguish *resilience* from *recovery*, either by the level of disturbed function shown or the length of time when adaptation is disturbed



(see Bonanno & Diminich, 2013; Masten & Narayan, 2012). Bonanno (2004) argued that only short-term, mild disturbances in function should be described as *resilience*, and deeper disturbances or more prolonged disturbances in function should be described in terms of recovery. Bonanno and Diminich (2013) refined this perspective to distinguish responses in the context of chronic and prolonged exposures from those following acute and isolated exposures, introducing the terms *emergent resilience* and *minimal-impact resilience*, respectively, to differentiate resilience in these situations. Masten and colleagues (Masten & Obradović, 2008; Masten & Narayan, 2012) describe all patterns of maintaining or returning to normal or better levels of function following catastrophic levels of exposure to acute or chronic adversity as variations in a spectrum of resilience pathways, while recognizing that there are distinct differences related to acute and chronic exposure, timing, and trajectory of impairment or recovery. Terminology aside, there is strong agreement that common patterns of function (defined by symptoms or adaptive behavior) vary during acute or chronic exposures to severe adversities and their aftermath and that these patterns hold important clues to understanding outcomes and informing interventions for children or adults.

### Multiple Interdependent Systems and Levels of Analysis

Contemporary thinking about children in war and disaster also has been profoundly influenced by Urie Bronfenbrenner's ecological systems model (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006), as well as relational developmental systems theory. In large-scale disasters, interacting systems across biological to macrosystem levels are usually disrupted, often simultaneously. As noted above, mass trauma experiences inherently underscore how dependent individual and family systems are on the many other systems in which their lives are embedded. These other systems may include basic utilities and water purification systems, emergency systems, economic systems, communications systems, transportation systems, school systems, food distribution systems, medical systems, and many other systems by which communities and governments function and also respond to emergencies. Disasters and war also highlight the role of culture, media and, increasingly, social media in both trauma exposure and human adaptation. Human life and development reflect the interaction of systems across many levels of analysis, from the molecular to the global level.

Increasingly, scientists conducting research and consulting on interventions for large scale disturbances have considered multiple levels of analysis and the importance of engaging multiple disciplines in efforts to understand, prepare and act in contexts of large scale threats (e.g., Gunderson, 2010; Masten & Obradović, 2008). In human research, there is growing interest in the processes by which trauma “gets under the skin” to influence current functioning and long-term development (Cicchetti, 2010; Gunnar & Herrera, 2013; McEwen, 2012; Pluess & Belsky, 2011; Pratchett & Yehuda, 2011). Attention to media effects is growing, especially as personalized media access and social media expand worldwide. Moreover, nations and international agencies are beginning to recognize that adequate preparation and response to large-scale humanitarian crises, whether they result from war, pandemic, industrial or natural disasters, requires expertise and coordinated action at many levels (Masten, 2011).

### Risk and Resilience Models

As noted, the literature on children in war and disaster is typically conceptualized within a risk and resilience framework. This framework emphasizes risk and promotive effects, cumulative risk and dose gradients, mediators of these influences, and vulnerability or protective influences that moderate the impact of adversity on adjustment or development. These models call attention to positive responses and adaptation in the wake of disaster and complex trauma, but they also acknowledge the impact of severe trauma exposure on children.

### Dose-Response Gradients

In the research on risk in development, investigators soon realized that risk factors tend to co-occur and that the association of cumulative risk exposure with negative outcomes tend to follow a rising gradient (Evans, Li, & Whipple, 2013; Obradović, Shaffer, & Masten, 2012). In the literature on trauma, disaster, and war, these findings and the graphs depicting the relation of rising risk to rising stress symptoms, frequency of posttraumatic stress disorder, and other problems are typically described as dose-response gradients.

Cumulative risk has been measured in various ways in the dose-response literature. These methods include life event questionnaires and interviews tailored to particular situations that assess whether particular experiences have happened and then tally them in some way. Items usually address multiple domains of potential traumatic events or

disruptions, such as exposure to violence, deprivation, loss of social support, relocation, or extent of social loss. In some situations, the proximity of the child or the caregiver to the “epicenter,” “ground zero” or path of destruction, literally or psychologically, has served as a severity index (Comer & Kendall, 2007; Goenjian et al., 2005). In cases of tornadoes, floods, earthquakes or terror attacks, literal proximity to areas of greatest destruction serves as a good index of exposure severity, with a falling gradient of exposure as the physical distance increases from the center of destruction.

In the case of other disasters and war without a single epicenter or path of destruction, exposure may be better indexed by a tally of exposure to specific traumatic experiences, such as witnessing death or torture, loss of loved ones, or rape (American Psychological Association [APA], 2010; Harder, Mutiso, Khasakhala, Burke, & Ndeti, 2012). Psychological distance also has been indexed in dose measures, because perceived threat or emotional proximity to the victims may have equal or more importance than actual threat or physical proximity for psychological impact (Dimitry, 2012; Hoven et al., 2005). In sum, multiple parameters of severity may be important to consider when gauging the “dose” of exposure for different individuals to events such as 9/11. These could include assessments of physical location during the event, extent of injury, perceived danger, relationship to victims and number of known victims affected, intensity of witnessed death and destruction, or the duration of these exposures during or after the event.

Investigators also have studied cumulative risk with respect to experiences that precede and/or follow an acute or chronic trauma experience. Research indicates that prior exposure to traumatic events, sometimes combined with additional adversities in the aftermath or recovery period, is related to worse outcomes. The combined effects are viewed as a higher dose of exposure or in terms of sensitizing effects. For example, the tsunami experience in Sri Lanka showed worse effects overall for children already living in a war zone than for children living in better pre-tsunami conditions (Catani et al., 2010). Prior childhood experiences of physical abuse had a sensitizing effect during the Second Lebanon War in Israel, such that abused adolescents had higher rates of PTSD (Schiff et al., 2012). For youth recovering after war or displacement, recovery does not go as well for those who experience ongoing or new abuse, community rejection, or other stressors during reintegration or in refugee camps (Reed et al., 2012).

Both linear and nonlinear dose effects have been observed (Klingman, 2006; Masten & Narayan, 2012). Studies of dose gradients usually test for linear effects, but curvilinear patterns relating exposure to adaptive function have been observed. Nonlinear effects could be exponential, with an accelerating increase in symptoms as risk level rises or a pattern of minimal observable effects at low exposure followed by a rapid increase at some threshold of severity (Masten & Narayan, 2012). Another kind of nonlinear pattern would be asymptotic effects, where effects of additional trauma exposure level off. This could occur when there is a threshold beyond which trauma exposure is so high that further exposure does not increase symptoms, a pattern observed in child soldiers (e.g., Klasen et al., 2010). Finally, exposure to extreme adversity may reverse the nature of responses. In a study of Palestinian children in Gaza, Qouta, Punamäki, and El Sarraj (2008) found a typical dose-response gradient from low to moderate levels of exposure, with adaptive behavior declining as dose of exposure increased; however, at extremely high exposure, functioning improved. The authors speculated that extreme political violence can inspire greater engagement or heroism, essentially motivating a growth response.

### *Unpacking Risk*

Measures of cumulative risk and corresponding dose gradients typically aggregate experiences into a single index. There are several major reasons for aggregation: (a) Measures of cumulative risk often have stronger associations with outcomes than any particular single risk factor; (b) the particular mix of risk factors often does not seem to matter as much as the overall number of factors; (c) risk factors commonly co-occur; and (d) this strategy serves the goal of data reduction (see Evans et al., 2013; Obradović et al., 2012). For certain research questions, however, “unpacking” these risk indices may make more sense (e.g., aggregated scores may obscure specific processes and interaction effects). Currently, there is growing interest in unpacking dose for situations of extreme or mass trauma to learn whether there are particularly toxic experiences that have more severe or lasting effects (Layne et al., 2010).

### *Determinants of Exposure*

Exposure is rarely completely random, and it often is related to development; both age and sex affect the odds for exposure to particular experiences during situations of extreme adversity. Age effects may occur because young children understand less of what is happening, because they are actively shielded from exposure by adults, or because

their activities and mobility in the world are so different from older youth (Masten & Narayan, 2012; J. D. Osofsky, 2011). Adolescents generally are more likely to understand what is happening, are less likely to be supervised than young children, have more connections to people and organizations that can be affected by catastrophic events, get recruited or called upon more to help in war, and also simply get around more than young children do (Eisenberg & Silver, 2011; Narayan & Masten, 2012; Reed et al., 2012). Protection from exposure also can vary by sex, with females more closely supervised or sheltered from unfolding violence or destruction and males more often recruited to engage actively in the situation, especially older males. Females often experience more sexual violence whereas males experience more trauma related to active involvement in war or violent conflict. Adults also hold age-related and gender-related expectations about children, which can affect not only the level of monitoring or buffering actions by adults, but also exposures to atrocities, such as rape or torture (APA, 2010; Reed et al., 2012).

Exposure also can be related to many other geographical, community, family, or individual differences. At any given time, there are regions of the earth more or less prone to earthquakes, floods, hurricanes, and political conflict. Low-income families or communities may live in locations with greater vulnerability (e.g., to flooding) or fewer protections (e.g., warning systems or evacuation services). Personality differences could influence exposure during disasters or war and contribute to the likelihood of joining a war or taking risks during a “superstorm.” Cognitive skills and emotion regulation skills could influence behavior that affects exposure as well as coping (Eisenberg & Silver, 2011). Height, strength, or attractiveness could influence the likelihood of being kidnapped for sex trafficking or slavery as a child soldier.

### *Mediating Processes of Exposure*

There is considerable interest in the mediating processes by which mass-trauma experiences affect children. Some processes are biological, within the individual child, while others are mediated by the families, friendships, and schools. Nations and economies can be devastated by major disasters and war, with long-term consequences for employment and economic opportunities for young people. Families and whole communities can be displaced, externally or internally, disrupting many aspects of family life, cultural practices, and education.

Many models of mediating processes for children have focused on stress at the family level. *Family stress*

*theory* was developed to account for processes by which large-scale economic crises, including the Great Depression (Elder, 1974/1999) and the Iowa farm crisis (Conger, Conger, & Martin, 2010; Conger & Elder, 1994) influence child development. In these models, economic strain initially generates stress and symptoms of distress in parents, often increasing interparental conflict and disrupting normal routines and effective parenting. These family disruptions alter the quality of parenting and family life for children in a spreading cascade.

There is also rising interest in the pregnancy-related effects of mass trauma stress on the developing fetus, as indicated above. In this case the unborn child experiences many biological consequences of the mother’s physiological stress through the placenta (Hertzman, 2012; Shonkoff et al., 2012). This phenomenon, whereby biological embedding of stress may be a mediating process of parental exposure to trauma and child outcomes, has been documented empirically. For instance, fetal programming as a result of trauma could increase the risk for PTSD across the life span (Yehuda & Bierer, 2009; Yehuda et al., 2007; Yehuda, Bell, Bierer, & Schmiedler, 2008). As evidence grows for intergenerational transmission of experience-induced epigenetic changes in animal and human studies, these prenatal effects portend ominous risks.

There is rapidly increasing attention to the long-term consequences of “toxic stress” exposure, broadly defined, both prenatal and postnatal, for health and development (Gunnar & Herrera, 2013; Johnson, Riley, Granger, & Riis, 2013; Shonkoff et al., 2012). Many aspects of mass trauma experiences fit the criteria for experiences defined as toxic by many of these scholars, with the potential to affect large populations for generations.

Developmental timing and sensitive periods are central to concerns about toxic stress exposure. Compelling evidence, including data from Chernobyl research described above, suggests that biological systems in the developing child are more sensitive to stress effects during particular periods of development, both prenatal and postnatal, effectively programming these systems for the long-term. Traumatic stress may alter the organization and “tuning” of multiple stress-response systems, including the immune system, the autonomic system, and the hypothalamic-pituitary-adrenal (HPA) axis (Gunnar & Herrera, 2013; Hochberg et al., 2011; Johnson et al., 2013; Meaney, 2010; Shonkoff et al., 2012). High levels of unregulated stress can be harmful to the developing brain and neural systems important for the top-down control of emotion and problem solving. Moreover, elucidation of epigenetic

processes, where experience alters gene-expression, offers plausible explanations of how early traumatic experiences could “get under the skin” to affect long-term health or brain development (Boyce, Sokolowski, & Robinson, 2012; Hochberg et al., 2011; Johnson et al., 2013; Meaney, 2010). Genetic and epigenetic studies remain limited in the study of war and disaster but important clues are beginning to emerge on genetically mediated consequences of severe trauma exposure, which are discussed in later empirical sections of this chapter.

It is not hard to imagine how prolonged mass disasters generate enormous stress in parents and the family system, with many direct and indirect consequences for family functioning, parenting, and child development, including family disintegration and child abuse (Eisenberg & Silver, 2011; Kaniasty, 2011; J. D. Osofsky, 2011; Reed et al., 2012). Yet many families show resilience during disaster, war, and displacement, continuing under sometimes extraordinary circumstances to provide emotional security, routines, monitoring, and hope to their children. Thus, there also is great interest in the processes that may protect or promote family function in times of great upheaval and interventions to support those processes (Masten & Monn, in press). Decades of research on family resilience in diverse situations can inform these efforts (Walsh, 2011).

### *Explaining Variations in Response*

Beyond exposure dose, what predicts the responses of children to mass trauma experiences, and particularly good or better recovery? There is considerable interest in this question because the answers can influence efforts to prepare for these experiences or facilitate recovery for children. Many factors have been studied, beginning in the classic studies of war and disaster described previously. These include the presence of secure attachment figures, child sex, cognitive abilities, opportunities to play or go to school or help with the recovery, faith and religious practices, and many other features of individual child, family, and community.

Some of the factors that predict good recovery are related to positive development under any conditions, such as good caregiving, nutrition, and health care. These are usually termed *promotive factors* (Sameroff, 2000). Others, such as emergency services or good arousal-regulation strategies, are particularly important as the level of adversity or stress rises, and these are often called *protective or resilience factors* (Masten, 2013). Parents function both ways: They promote good development at all levels of risk but, in the midst of severe trauma, effective parents take extra steps to protect and buffer their children in

response to the nature of threat in the context. Protective factors moderate the impact of trauma on child function or development.

Research on children in war and disaster has considered vulnerabilities as well as promotive and protective influences on response. Moderators that increase the negative effects of exposure are viewed as *vulnerability* factors. Additionally, investigators in this area have considered the possibility that extremely traumatic experiences can *induce* vulnerability or resilience for later adversities.

Developmental timing has been implicated for both vulnerabilities and protective processes, raising the interesting question of timing with respect to sensitization versus inoculation effects of early exposure to trauma (Masten & Narayan, 2012). Some exposure to adversity (in lower doses that the organism can manage) may be essential for activating healthy defense systems for later responses to stress or infection, whereas too much exposure or exposure at the wrong time may sensitize the organism, creating vulnerability (Rutter, 2006; Seery, Holman, & Silver, 2010). Sensitization and inoculation models that clarify “the right dose at the right time” would improve understanding about how to prepare children and families for better responses to mass-trauma experiences.

Children and parents also differ in their typical reactions to experience and the resources they can draw on for adaptation. These differences are studied as moderators of adversity at multiple levels of analysis, including genetic differences and personality differences, neurocognitive function, problem-solving abilities, social support, socioeconomic resources, community resources, and religious or cultural practices, among other differences. These differences often are studied in war or disaster as vulnerabilities, or promotive or protective factors, depending on how they function.

### *Differential Susceptibility and Sensitivity to Context*

One of the most intriguing concepts in research on individual differences is the idea of differential susceptibility to experience or variations in sensitivity to context (e.g., Belsky & Pluess, 2009; Boyce & Ellis, 2005; Obradović & Boyce, 2009; Pluess & Belsky, 2013). These concepts propose that some individuals are more sensitive to experience, “for better or for worse” (Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007). These individuals, who may have distinctive biological profiles or genetic characteristics, are more reactive to their environments, including traumatic experiences and positive experiences. In the context of extreme stress, they may do poorly if unprotected, but in



good situations, they may flourish. Such children also may be more responsive to the protections afforded by parents or interventions to promote positive development. It has further been proposed that experience itself, particularly early in development, could alter these characteristics in that either very positive experiences or very negative experiences could shift the organism toward greater sensitivity (Boyce & Ellis, 2005).

### **Cascading Consequences and the Intergenerational Transmission of Trauma**

Concepts and themes presented above suggest that there are potential long-term and spreading effects of mass-trauma experiences on development, over the life span and also across generations. As noted, scholars long have expressed concern about progressive, expanding, and/or intergenerational effects of extreme trauma (La Greca, Silverman, Lai, & Jaccard, 2010; Masten & Narayan, 2012). New research on the possibilities of epigenetic transmission of trauma effects has opened a whole new dialogue on this longstanding set of questions. There are also many other processes of interest to scientists who study war and disaster, at the level of social development and parenting or cultural change.

Some children spend their entire childhoods in a context of war or in an impoverished refugee camp. What are the long-term consequences of these experiences for individual children, the global well-being of children, and hopes for global peace? Many scholars across the world, as well as global agencies concerned with children, such as the United Nations and World Bank, are raising these questions. It is important for developmental scientists to respond and contribute to this important dialogue, an issue discussed further in the concluding section of this chapter.

### **CHILDREN IN WAR, TERRORISM, AND VIOLENT POLITICAL CONFLICT**

The locations and nature of war and political violence have changed markedly over the past century, although the devastating effects of mass violence remain a global threat. In 1996, a landmark report was presented to the General Assembly of the United Nations by Graça Machel titled *The Impact of War on Children*. Machel, a well-known educator and children's advocate from Mozambique, had been charged with preparing an independent examination of the impact of armed conflict on children. The report, along with follow-up reports (Machel, 2000; UNICEF,

2009), had far-reaching effects in bringing the issues of children in war to the forefront of global attention.

The multifaceted nature of the devastation wrought by armed conflict on child development is hauntingly clear in these reports. Children suffer direct physical and psychological injuries. They lose their parents, their homes, their hopes, and their futures, often experiencing the horrific combination of atrocity and deprivation. Wars rob children of security and food. Farmers stop growing crops and soldiers burn land to starve civilians as well as combatants. Economic development, education, and the viability of land for growing food are all sacrificed in the course of ongoing conflicts. Commerce, exchange of information, and international aid are also disrupted. Millions of families with children are displaced by war and conflict, often residing for long periods in unsafe and unhealthy refugee camps.

In the initial report, Machel (1996) noted that contemporary armed conflicts killed and maimed more children than soldiers. In Mozambique alone, from 1981 to 1988, she documented that 454,000 children died from direct and indirect effects of the conflict. Children in many war-affected regions already suffer from the health burdens of malnutrition and disease, and they are vulnerable to the added threats of conflict. During the height of the conflict in Somalia, half of the deaths among children were caused by measles. The residue of conflict also includes landmines and unexploded ordinance that can cause harm years after the conflict ends.

This section highlights current empirical findings on the impact of violent political conflicts on child development. Findings on the nature of exposure and dose effects are presented first, followed by findings related to mediating processes and moderating influences, and the role of the recovery context. Results from intervention studies are discussed, as well as interest in promoting peace through child-focused activities.

#### **Variation in Exposure**

The nature and severity of traumatic exposures in violent political conflicts vary across situations. Experiences may begin and end suddenly or be prolonged with no discernible onset or offset. Ongoing conflicts can be punctuated by sudden terrorist attacks or surges in violence. Children may be held hostage for days, as in the 2004 Beslan school hostage incident in Russia, or kidnapped into an army to serve as a child soldier for years. Exposures may be direct, with physical injuries or witnessing of atrocities, or

indirect, including media exposure. Armed conflicts often generate complex trauma exposures for children, who may witness torture, lose their parents, suffer starvation, endure rape, and encounter many other terrifying experiences.

Tol, Song, and Jordans (2013) reviewed findings on children and adolescents living in areas of armed conflict, focusing on studies addressing child mental health or resilience that were conducted in low- and middle-income countries, where most children affected by armed conflict live. Of the 53 peer-reviewed articles meeting their inclusion criteria, 15 were qualitative or mixed-method studies and 38 were quantitative. They did not attempt a meta-analysis because of the inconsistencies in many aspects of the studies. They noted numerous shortcomings in the literature, particularly in measures and design. For example, validated and culturally sensitive measures were rare, most of the studies were cross-sectional, and the longitudinal studies usually had small sample sizes. Nonetheless, the authors concluded that the supportiveness of the context was equally as important if not more important for promoting resilience than individual qualities of the children. In addition, resilience-promoting influences did not fully counter the impact of severe (particularly ongoing) trauma. Therefore, interventions cannot focus solely on promoting strengths but also need to mitigate risk and/or reduce vulnerabilities. Tol et al. (2013) also emphasized the complexity of resilience processes in the context of armed conflict, and the need to tailor interventions and intervention research to the particular context.

Over the past decade, millions of children in Africa, the Middle East, Sri Lanka, Afghanistan, and other regions of the world have been affected by political violence and war; children have been massacred, orphaned, injured, separated from parents, and displaced. Studies of children in protracted conflicts in Sierra Leone, Uganda, and Sudan, for example, have documented severe and prolonged exposures to war atrocities. These atrocities include the experiences of child soldiers, discussed below, and also profound suffering brought about by death of parents, destruction of home and community, dislocation, maiming, and injuries.

Conflict in Sudan began in 2003, eventually resulting in terrifying attacks by militia (known as the Janjaweed) on civilians, including children. Morgos, Worden, and Gupta (2007-2008) documented the experiences and trauma symptoms of 331 internally displaced children from the Southern Darfur region of Sudan. Over 90% of children reported experiencing each of the following events: home invaded, witnessed homes burned, witnessed shootings,

and hidden to protect themselves. About 75% had witnessed torture, half had been threatened with death, and half had witnessed people burned alive. Over 40% had experienced death of a sibling and witnessed rape, 24% had parents die, and 22% had been forced to kill or injure members of their families.

In Uganda, even young people spared from life as a child soldier suffered many traumatic experiences. This conflict began in the 1980s, between government forces and the Lord's Resistance Army, notorious for their forced recruitment/abduction of children to be child soldiers. In a rare comparison study of child soldiers with peers from the same conflict, Moscardino, Scrimin, Cadei, and Altoè (2012) compared the rates of traumatic experiences reported by adolescents who were former child soldiers and similar youth from the same region of northern Uganda who had never been abducted as child soldiers. Youth aged 14 to 18 from four schools in the Gulu district, a region at the center of this conflict, were invited to participate, with 234 out of 238 invited students taking part. The former child soldiers ( $n = 133$ ; 57% of the sample) had much higher rates of traumatic experiences than the never-abducted youth, but exposures reported by never-abducted youth ( $n = 101$ ; 43%) were also quite high: 52% of the never-abducted were beaten (compared with 78% of child soldiers); 52% were injured (80%); 31% witnessed someone killed (69%); 7% killed someone personally (47%); 10% had to drink urine (51%); 16% had to punish other children (76%); 22% had to fight (76%); and 19% were forced to engage in sexual contact (45%; Moscardino et al., 2012).

### *Child Soldiers*

As evident in the data from Moscardino et al. (2012), child soldiers in the Lord's Resistance Army experienced severe, repeated, and prolonged traumatic experiences. They were abducted at an average age of 11.9 years (ranging from 5 to 17 years old) and held for an average of 2 years. The investigators also observed that correlations between particular traumatic experiences and mental health problems were more often found for the never-abducted sample, potentially due to the extreme range of responses in abducted children. Overall, child soldiers had more severe signs of PTSD, but mental health problems among the child soldiers were barely related to the severity and nature of specific traumatic experiences. This finding has been observed in another study of child soldiers from Uganda by Klasen et al. (2010), and is consistent with an asymptotic effect, such that exposure levels this high exceed the severity threshold for full expression of any dose-response effects.

One of the most important longitudinal studies of child soldiers was conducted by Betancourt and her colleagues in Sierra Leone (Betancourt et al., 2010; Betancourt & Khan, 2008; Betancourt, McBain, Newnham, & Brennan, 2013). Prospective studies are rare in this literature, although Boothby has followed a small cohort of former child soldiers from Mozambique for many years (Boothby, Crawford, & Halperin, 2006).

The conflict in Sierra Leone began in the 1990s in a civil war among the Sierra Leone Army, the Revolutionary United Front, and other parties. This conflict resulted in extensive harm to children, with many children forced into combat or slave service in the armies, directly assaulted and mutilated, or indirectly harmed by the consequences of this destructive and lengthy conflict. In many cases, the revolutionaries deliberately tried to break the ties of the young conscripts to their homes by forcing them to commit atrocities against their families and communities so that they could not return. By 2001, nonetheless, many child soldiers returned and the United Nations mission in Sierra Leone confronted the challenges of demobilizing and re-integrating many of these child soldiers.

In the study by Betancourt et al. (2010), 156 former child soldiers aged 10 to 18 years were assessed in 2002, with follow-up assessments after 2 years. These children had spent an average of more than 5 years with the RUF. Given this sample was comprised of survivors, the investigators noted that the children must have been particularly resourceful. The investigators examined change over time in symptoms among the former child soldiers. They found that increased hostility over time was predicted by the experiences of rape and wounding or killing others, traumas that the investigators describe as toxic for children. Their disaggregated analysis on the importance of specific experiences for distinct outcomes aligns with the goal of unpacking dose-response effects discussed above. These investigators also studied the importance of the recovery context, discussed further below.

A subsequent report by Betancourt, McBain, et al. (2013) analyzed three waves of data from this ongoing prospective study, to study trajectories of internalizing symptoms over time. Four groups were derived in this analysis: youth who held a steady low course of internalizing symptoms (41%; a stress-resistance pattern); youth who improved over time (47%; a resilience-recovery pattern); youth who had persisting symptoms (5%); and those who worsened over time (6%). Thus, about 88% of these young people showed some kind of resilience-recovery over time in this one domain of functioning. These investigators

continue to follow these Sierra Leone youth as they grow up and have their own children; their research may reveal longer-term or intergenerational consequences of severe trauma exposure.

Betancourt, Borisova, et al. (2013) reviewed the existing literature on child soldiers, using the Systematic Assessment of Quality in Observational Research (Ross et al., 2011) to identify empirical studies meeting quality standards, a system developed for psychiatric research. Of 21 studies from 10 countries, they identified only eight studies of high quality and four of moderate quality. Five were intervention studies and two were prospective. Very few had comparison groups. These studies corroborated the extreme level of violence exposure typical for child soldiers, with similar rates for boys and girls. Girls were often, though not always, more likely to experience rape as child soldiers. Girls also tended to report more psychological problems. More mental health problems were observed in child soldiers who were abducted into service, perpetrated violence, or witnessed the death of family or friends. In some contexts, including Sierra Leone and Nepal, returning girls who experienced rape received less community support and experienced more stigma. Better outcomes were associated with family and community acceptance in multiple studies. Perhaps most notable in this review was the overall paucity of research, particularly on interventions, given the scope of the problem worldwide.

### *Prolonged Political Conflict*

There is a distinct literature on young people experiencing lengthy political conflicts in the Middle East, Northern Ireland, and other “hot spots” of ethno-political conflict around the world (Barber, 2009a; Cummings et al., 2012; Dimitry, 2012). These conflicts often are deeply rooted in the history and cultures of the region. Violence may wax and wane, exposing children and youth to many forms of threat. Young children may be exposed directly to violence but also experience the stress of repeatedly being taken to shelters during bombing attacks; strain on family members; loss or separation from parents due to injury, death, and incarceration; and disruptions of family and daily routines, such as school. Adolescents, in addition, may voluntarily participate, endangering themselves physically and psychologically. They also risk arrest, incarceration, humiliation, or torture at the hands of the other side of the conflict.

There have been numerous studies published since 2000 on conflicts in the Middle East, particularly related to the Palestinian-Israeli conflict (see Barber, 2009a; Dimitry, 2012). One of the most distinctive aspects of this body

of research is the focus on adolescents engaged in the ongoing conflict, including their identity development and the meaning young people ascribe to these conflicts and their roles in it (Barber, 2009b). Many youth join these conflicts and appear to gain a positive sense of identity and agency through their engagement. Understanding these situations and how to intervene to promote peace, reduce violence, protect children, and prevent intergenerational transmission of the conflict requires great sensitivity to the historical and cultural issues involved, as well as a developmental perspective.

### ***Terror Attacks***

Over the past two decades, research on the effects of terrorism on children has been spurred by major events with global impact, including the Oklahoma City bombing on April 19, 1995, the World Trade Center attacks on September 11, 2001, and the Beslan school siege in September of 2004. The Oklahoma City bombing shocked the world, but the deaths of 19 young children from the daycare centers within the Federal building had an especially searing impact. The effects of this bombing on children have been documented in a series of publications by Pfefferbaum and her colleagues (e.g., Gurwitsch, Sitterle, Young, & Pfefferbaum, 2002; Pfefferbaum, Call, & Sconzo, 1999; Pfefferbaum, Nixon, et al., 1999; Pfefferbaum et al., 2002).

Over 3,000 children lost parents in the attacks on the World Trade Center and many more lost loved ones. It is estimated that 10% of youth in the New York City area knew someone who died. However, the scale of the impact was global: Acts of terror are intended to propagate fear over large distances and in many more people than those directly targeted. Live news coverage and replays of this attack amplified effects on people around the world, including children.

Numerous studies were conducted after the 9/11 attacks, both in New York and across the United States (Pfefferbaum et al., 2013). Many of these studies focused on internalizing symptoms including symptoms of PTSD. The New York City Board of Education commissioned a study of the mental health needs of students in the public school systems about six months after the attack on the WTC. Over 8,000 students (around 9 to 18 years of age) were surveyed across 94 schools (Hoven et al., 2005). Results suggested elevated trauma symptoms throughout the city. Risk for PTSD-level symptoms was related to personal exposure to the attacks (e.g., injured, in the smoke cloud), family exposure or death, previous trauma exposure, and

media exposure. National surveys also indicated substantial symptoms of PTSD shortly after the attacks, in adults and children (e.g., Schuster et al., 2001). Some studies also observed a correspondence between parent symptoms and child symptoms (see Comer & Kendall, 2007; DeVoe, Klein, Bannon, & Miranda-Julian, 2011; Eisenberg & Silver, 2011; Phillips, Featherman, & Liu, 2004).

A number of studies on the effects of media emerged after 9/11 (Lengua, Long, Smith, & Meltzoff, 2005; Otto et al., 2007; Phillips et al., 2004; Saylor, Cowert, Lipovsky, Jackson, & Fitch, 2003; Schuster et al., 2001). Results were mixed but generally showed that media exposure could be traumatizing or retraumatizing, and that young children, especially preschoolers, do not understand that media coverage is repeated. In their national survey 5 days after 9/11, Schuster et al. (2001) found that one third of parents reported restricting their children's television viewing, an idea that many experts on disaster response have encouraged.

Another heart-wrenching terror attack unfolded 3 years after 9/11, in September of 2004, when armed separatists (Chechens, Ingush) occupied a school in the Russian town of Beslan. Approximately 1,300 hostages were held in the school, including nearly 800 children. The children spent over 50 hours without food or water in a hot gymnasium, wired with explosives, and witnessed the murder of other hostages (Moscardino, Axia, Scrimin, & Capello, 2007; Scrimin, Moscardino, Capello, Altoè, & Axia, 2009; Scrimin et al., 2011). After 3 days of standoff, the Russian forces stormed the building, using heavy arms. Over 300 hostages died in the ensuing explosions, fire, and battle, including 186 children.

One of the post-Beslan studies (Scrimin et al., 2009) focused on emotion recognition in exposed (101) and nonexposed (102) children (Age 12 years on average) 20 months after this terror attack. Results suggested that children in both groups responded similarly to faces expressing pure emotions (e.g., anger, sadness). However, when they were asked to recognize morphed, mixed-emotion faces, they were more sensitive (accurate) in detecting anger, a bias also observed in maltreated children (Pollak, Cicchetti, Hornung, & Reed, 2000).

### **Determinants of Exposure**

Exposure to the trauma of war, terrorism and political violence in children varies by characteristics of individuals, families, communities, natural and social ecologies, and geopolitical as well as historical context. Some children



are specifically targeted in war or political violence, while others are simply more likely to be exposed. At the same time, there are some random elements to exposure, particularly in surprise attacks, when individual exposure is unrelated to any characteristics of exposed children or families.

### *Individual Differences*

Evidence continues to support observations about age differences from early research (e.g., Dimitry, 2012; Drury & Williams, 2012; Dubow, Boxer, et al., 2012; Eisenberg & Silver, 2011; Masten & Narayan, 2012; Reed et al., 2012). Older youth, compared to young children, usually have higher objective exposure to the wide scope of potentially traumatic experiences in most situations of war or conflict, for several key reasons. First, they are more likely to be out of the home or supervision of caregivers and more active in the wider community or social media, which increases exposure to many elements of war or terror. Second, they have wider social networks that expose them to greater potential for loss and concern about friends. Third, they are more capable of many actions that could lead to voluntary or involuntary involvement in the situation and thus more likely to be targeted for recruitment or rape. Finally, older youth have much better understanding of the immediate and long-term implications of an unfolding crisis, due to more advanced cognitive skills; they have more abstract and also more realistic fears about the meaning and lasting consequences of war and terrorism (Barber, 2009a; Dimitry, 2012).

Younger children may have lower objective exposure to the broad scope of a disaster due to immature cognition and limited mobility, and the direct efforts of adults to shield very young children from exposure. At the same time, young children are highly dependent on caregivers and sensitive to disturbances in parent function and family routines. Within their small scope, exposure may be profoundly mediated by the exposures or behaviors of their caregivers (J. D. Osofsky, 2011).

Studies also corroborate findings on sex differences (Barber & Schluterman, 2009; Dubow, Boxer, et al., 2012; Masten & Narayan, 2012). Girls are more often targeted for rape and forced sexual service as child soldiers, although boys are targeted as well. In some conflicts, rape is used as a tactic of war, as a weapon of terror and ethnic cleansing. Boys are more often called on to fight in wars and political conflict, either voluntarily or involuntarily, which increases exposure to combat-related violence, injury, death, and capture.

Individual differences in cognition, self-regulation, and risk-taking behavior also would be expected to influence

exposure to danger in the context of war and related violence. Young children may be protected from potentially harmful effects of such individual differences because they are monitored so closely. However, individual differences would be expected to play a larger role in exposures of older children and adolescents. Cautious or fearful youth, for example, would not be expected to engage as often in dangerous activities as bold, sensation-seeking, or impulsive youth (Belsky, 2012; Otto et al., 2007). However, there continues to be a paucity of research on individual differences as determinants of exposure.

### *The Roles of Family in Exposure*

Families, and especially parents and other primary caregivers, have many responsibilities and strategies for protecting their children from harm in the course of development, which are not unique to war and political violence. In many ways, caregivers are “gatekeepers” of exposure, to the degree that is feasible or age-appropriate (Pine, Costello, & Masten, 2005; Qouta et al., 2008). In terms of exposure to war, terrorism, and political violence, parents may actively intervene to regulate exposure in many ways, such as acting as physical shields, moving children to safer places or bomb shelters, supervising child activities, monitoring television and media use, keeping children inside, and discouraging potentially harmful peer friendships. They also may not fully inform young children as a protective strategy. Clearly these strategies will all depend on the development of the children and parents’ perceptions of dangers, as well as the personality (e.g., cautiousness or inhibition) of the parents (Belsky, 2012; DeVoe et al., 2011; Hendricks & Bornstein, 2007; Saraiya, Garakani, & Billick, 2012).

Given their exposure-moderating role, family capabilities and resources would be expected to influence how well the family can reduce exposure. These resources might include economic or social capital to get help or move to safer locations. When parents are depressed or traumatized, or they are disabled by the unfolding crisis situation, they may not be able to protect children as well from exposures. Children or youth who do not have any functional parenting figures in the caregiver/protector role (e.g., caregivers are dead, separated, or disabled) will be at much higher risk for exposure to all forms of danger in wars or conflict (Masten & Narayan, 2012; Masten & Obradović, 2008; Sagi-Schwartz, 2012). Thus, it is not surprising that the UN and many humanitarian organizations emphasize the importance of reuniting children with families or placing them with safe and protective caregiving adults when that

is not possible (Ager, Stark, Akesson, & Boothby, 2010). To date, however, there remains little direct research on the roles of family in regulating exposure during war, terrorism, and violent political conflicts (Gewirtz, Forgatch, & Weiling, 2008).

### **Media**

Concerns about media exposure continue to increase, most likely due to the general escalation in media use including social media in the midst of conflicts. Media exposure is extremely common in mass violence events and this exposure has been linked to symptoms in children as well as adults (Bonanno et al., 2010; Comer & Kendall, 2007; Dimitry, 2012; Eisenberg & Silver, 2011; Masten & Narayan, 2012; Otto et al., 2007; Saraiya et al., 2012). There has been particular attention to media exposure in very young children, although there is growing concern for older youth because they have increasingly unfiltered access to social media and global broadcasts.

To date, research has focused on television exposure. Less is known about the impact of the Internet and virtually nothing is known about the role of social media in propagating terror or vicarious violence exposure. Terrorists may exploit media to spread terror, and all sides of political conflicts utilize media to spread visual images of conflict to promote their causes or perspectives (Martin, 2013). However, emergency responders and governments use media to provide information and instructions to families to reduce fear and panic.

There are broader, international concerns about the role of violence exposure through media on child development, particularly with respect to the effects of playing extremely violent video games, using websites that incite violence, and cyberbullying (Anderson et al., 2010; Gentile & Bushman, 2012; Lam, Cheng, & Liu, 2012; Romer, Bagdasarov, & More, 2013). Data mining of social media and Internet traffic to detect emerging threats or danger zones and intercede to prevent mass violence or cyberbullying is now underway (Dinakar, Jones, Havasi, Lieberman, & Picard, 2012; Ptaszynski et al., 2010). More research is needed on the roles of contemporary media on child exposures to war and political violence and the potential of media for prevention and intervention.

### **Community, Cultural, and Geopolitical Differences**

Wars and political violence have characteristics related to the nature and dynamics of the conflict itself, the local community and cultural traditions, and geopolitical parameters. Dangers for children would be expected to vary in relation

to conflict-related features, the economic and social situation in the community, and the political situation.

The social ecology of war and political conflict in relation to the experiences of children, youth, and families is gaining more attention, though research remains limited. For example, investigators have contrasted the socioeconomic, political, cultural, and daily life experiences of Palestinian, Israeli-Jewish, and Israeli-Arab children living in Gaza, the West Bank, and other regions of Israel, and they have studied the effects of the Palestinian-Israeli conflict on children and youth (Barber, 2009b; Boxer et al., 2013; Dimitry, 2012; Dubow, Huesmann, et al., 2012). Exposures vary by region and ethnic group within region.

Based on data from their longitudinal study of Palestinian and Israeli youth, Boxer et al. (2013) suggested that differences in ethnopolitical violence at the level of social ecology influence the degree of violence exposure of youth living in those contexts and have effects over time on the development of aggressive behavior, particularly during late childhood and early adolescence. They tested a model grounded in Bronfenbrenner's (1986) ecological theory, employing a cohort sequential design where they collected data over three waves and 3 years, beginning with children who were 8, 11, and 14 years old. This study represents a unique, longitudinal analysis of multilevel dynamics linking political violence at the macro level to violence in child microsystems (community, family, school) to individual child aggression. Findings from this study are consistent with cascading effects of violence across ecological contexts. Ethnopolitical violence in children's exosystems was associated with increases in children's aggressive behavior via the negative effects on children's microsystems, including violence in community, family, and school contexts.

### **Variations in Response: Mediating and Moderating Processes**

Research published in this new millennium supports many of the classic findings about the responses of children to different forms of political violence, while also building a more nuanced database. In this section, we describe new evidence pertinent to understanding processes that may explain variations in how children respond to mass-violence exposure.

#### ***Dose-Response Gradients***

Dose remains a major determinant of response variation. Numerous studies have observed a classic linear pattern of

response (e.g., posttraumatic symptoms) rising as a function of exposure dose, although there is growing attention to nonlinear response patterns (Barber & Schluterman, 2009; Eisenberg & Silver, 2011; Masten & Narayan, 2012). The meta-analysis by Furr, Comer, Edmunds, and Kendall (2010), which included terror events (but not war) among the acute disaster studies reviewed, found that posttraumatic stress symptoms in children were related to greater overall loss of life, closer physical proximity of exposures, and death of loved ones or friends. Dimitry's (2012) review of findings from studies of armed conflict in the Middle East also found consistent evidence of dose-response gradients, with number of exposures and proximity to life-threatening experiences associated with a wide variety of emotional and behavioral problems and risk-taking behaviors in youth.

Studies also implicate the importance of context before and after mass-terror events for understanding dose. Children exposed to 9/11 with previous trauma histories had more posttraumatic stress symptoms than children with lower levels of preexisting trauma (Eisenberg & Silver, 2011). Adolescents exposed to ongoing political conflict had more PTSD symptoms, substance use, and violence perpetration if they had been maltreated in childhood (Schiff et al., 2012). These findings echo patterns from sensitization or depletion models.

Children's subjective experience of exposure or trauma also is associated with distress and other symptoms in the aftermath of conflict and terror (Bonanno et al., 2010; Comer & Kendall, 2007; Dimitry, 2012; Eisenberg & Silver, 2011). Perceptions of threat and danger in children may be influenced by many factors (discussed further on in the chapter), but caregivers may play a particularly salient role. Children "read" danger in the facial expressions and reactions of trusted attachment figures and model their behavior (Gewirtz et al., 2008; Masten, Best, & Garnezy, 1990; Muris, Steerneman, Merckelbach, & Meesters, 1996). Research on children in war zones, hostage situations, and during or after bomb and terror attacks often has found that child symptoms are related to parent symptoms. This could occur for many reasons, but partly may reflect the influence of frightened parents on child perceptions of danger.

Interest in unpacking dose-response gradients is evident in many studies of war and terror that have examined whether certain experiences have greater effects. As indicated above, studies of child soldiers suggest that killing other people (which may include being forced to kill family members or friends), violent rape, and violent injury may

be especially traumatizing. Experiences of direct violence, traumatic death, death of parents, and ongoing trauma after an acute exposure or within the recovery context also appear to be particularly traumatizing for children, across different situations of trauma in childhood, including war and terror.

### *Individual Differences and Developmental Timing*

Research continues to indicate that age, or the developmental differences across age (e.g., in comprehension or self-control skills), affect exposure severity and responses to war and political violence. However, it is difficult to interpret effects by age because exposures and protections in war and terror situations are often so different for infants and very young children compared to older children.

There are good reasons to expect that developmental timing of extreme trauma would be critical given advances in knowledge about sensitive periods for brain development and stress-related programming effects. Yehuda and her colleagues have reported such timing effects in offspring of mothers who were pregnant during traumatic experiences of war or terror (Yehuda & Bierer, 2009). Mothers who were pregnant during 9/11 and developed PTSD had lower cortisol levels, as did their infants, compared to nonexposed mothers and mothers who did not develop PTSD following 9/11. Maternal exposure to 9/11 during the third trimester, and resulting PTSD, yielded the strongest effects (Yehuda et al., 2005). This pattern is consistent with the possibility that prenatal stress exposure alters the biological systems that regulate physiological stress in children. Yehuda and colleagues (Yehuda et al., 2007; Yehuda et al., 2008) have studied children of Holocaust survivors, finding a similar pattern of lower cortisol in children of parents with PTSD compared to children of Holocaust survivors without PTSD and parents not exposed to the Holocaust. They also found that maternal (but not paternal) PTSD in Holocaust survivors was related to PTSD risk in the children. These findings are congruent with models of gene-expression (e.g., for glucocorticoid genes) related to maternal stress and its effects on the fetus, with potentially lifelong health effects (Hertzman, 2012; Yehuda & Bierer, 2009).

There also may be developmentally differentiated responses of other people to child victims of war and terror. In the study of returning child soldiers described above, former child soldiers who were younger were more accepted than older youth when they returned home (Betancourt et al., 2010).

Adolescents' intensification of identity, autonomy, spirituality, and/or ideology also may interact with exposure

to war, political violence, and terrorism. Barber and others who have studied youth participants in political conflicts in Ireland, the Balkans, and the Middle East (see Barber, 2009a) have noted the salience of meaning-making systems of belief about self and the purpose of conflict for the psychological well-being of the youth involved. Many of the youth engaged in the Intifada uprisings expressed pride and a sense of a larger purpose in their involvement (Barber, 2009b). Child soldiers, even those coerced into service, may redefine themselves as leaders in an important cause. Adults may exploit powerless youth's yearning for a sense of control and meaning, thereby promoting a sense of identity or commitment to the cause and rewarding child soldiers who fall into line with the goals of the group or its leadership.

Based on intensive and longitudinal study of former child soldiers from Mozambique, Boothby, Crawford, and Mamade (2009) noted that in the recovery center, boys who had spent 6 months or less as a child soldier viewed themselves as *victims* of RENAMO (Mozambique National Resistance), whereas boys who had spent a year or longer as child soldiers described themselves as *members* of RENAMO. Examples of comments by the latter group include: "I could have escaped but didn't because I had a good position"; "I first served as his personal servant. Then he made me chief of a group of other boys. I had power" (p. 244).

Findings related to sex differences continue to be complex in studies of violent political conflicts. It is difficult to sort out these differences when the nature of exposures and their cultural meaning vary for males and females. The most widely reported sex difference in the literature on mass trauma is the finding that females exhibit or report more internalizing symptoms including anxiety, depression, distress, or trauma symptoms, as well as PTSD (Barber & Schluterman, 2009; Furr et al., 2010). However, this finding is not universal, with some studies finding no significant differences in responses of males compared with females (e.g., El Zein & Ammar, 2011). Other studies have found no significant differences in rates of PTSD even when girls report more internalizing symptoms (McMullen, O'Callaghan, Richards, Eakin, & Rafferty, 2012; Reed et al., 2012). To complicate matters further, one study after terrorist attacks in Israel found that girls reported more symptoms of PTSD and fear, but boys reported PTSD symptoms that were more severe (Laufer & Solomon, 2009).

Evidence also continues to support the longstanding observation that males show more externalizing problems than females in extreme adversity (e.g., Dimitry, 2012).

Cultural and social roles and expectations for males in mass violence may differ from girls in ways that might increase the likelihood of aggression or violence (Belsky, 2012). Male youth also are often engaged more directly in battle, recruited and trained to fight, and expected by their cultures or families to show strength or heroism involving aggression (Dimitry, 2012; Qouta et al., 2008).

In the broad literature on child responses to extreme adversity, individual differences in child cognitive skills, personality, and coping capabilities have been studied in relation to child responses and outcomes (Cicchetti, 2013b; Masten, 2007, 2013; Zimmer-Gembeck & Skinner, 2011). Studies focused on war, political violence and terror continue to examine individual differences that may exacerbate or ameliorate child responses to severe adversity, although research in this area remains limited (Dubow, Huesmann, et al., 2012; Eisenberg & Silver, 2011; Masten & Narayan, 2012). Given rising interest in the neurobiology of resilience, there is notably limited data on possible moderating effects of individual differences at the biological level, although there are some studies of individual differences in cortisol responses before and after children's exposure to trauma (Delahanty & Nugent, 2006; Vigil, Geary, Granger, & Flinn, 2010).

Cognitive skills can be a double-edged sword, in the sense that more reflective or thoughtful children may be more aware of the scope of war or terror, perceive more direct threat, or have empathy for the victims, while at the same time they are better at problem-solving, finding help, or eluding capture. Studies of youth in Palestine have suggested that cognitive capabilities, such as creativity and mental flexibility, may be protective in contexts of political conflict (Qouta et al., 2008). Refugee children who can recruit skills of cognitive restructuring and effective emotional expression may adjust more positively to the recovery context. Furthermore, less guilt-related cognition, as well as less vindictiveness and vengefulness, were noted to be important in the resilience processes of child soldiers (Klasen et al., 2010).

Self-regulation skills hold particular interest because they play a key role in everyday management of stress and goal-directed action, have been implicated in many studies of resilience in children, and have potential as targets for intervention (Eisenberg & Silver, 2011; Masten & Coatsworth, 1998; Zelazo & Carlson, 2012). In one of the few studies with preconflict data, preschoolers were assessed in Kenya before and after a short-term, sudden-onset political conflict (beginning in December, 2007 and lasting for 3 months; Kithakye, Morris, Terranova, &



Myers, 2010). Teachers rated child adjustment before and after the conflict. After the conflict, effortful control skills (i.e., attention focusing, attention shifting, and inhibitory control) and trauma exposure were assessed in 84 children Ages 3 to 7. After statistically controlling for preconflict behavior, effortful control skills were associated with less aggression and more prosocial behavior and were protective for more positive postdisaster adjustment.

Eisenberg and Silver (2011) reviewed the evidence on coping styles and behavior in 9/11. Findings are overall sparse and inconsistent. There was some evidence that active and voluntary efforts to cope through problem-solving, positive thinking, distraction, and other strategies were associated with fewer stress symptoms than either involuntary engagement (e.g., rumination) or involuntary disengagement (e.g., numbing, avoidance).

Studies of hope, optimism, faith, and beliefs about the meaning of life in children in war and political conflict have been rare, although these indicators of subjective well-being and cultural connectedness have been included in several studies (Dimitry, 2012; Masten & Narayan, 2012). Youth who survive war, life as a child soldier, and related traumatic experiences may gain a sense of pride in their survival or activism. Positive beliefs and feelings, self-confidence, and self-efficacy often accompany positive behavior under many circumstances, including recovery after mass trauma experiences. However, it is difficult in studies with limited preconflict data to know whether positive attitudes and beliefs contribute to or stem from positive recovery.

### *Mediating and Moderating Processes in the Family*

For many decades, investigators have consistently observed that children's adjustment and recovery following exposure to war or terrorism are closely linked to the availability and responses of their caregivers. Parent-child relationships are a key adaptive system that not only shields children from the aftermath of trauma but also influences how children react to, process, and recover from traumatic events. Positive parenting practices, characterized by warmth, support, and structure, are associated with children's positive adjustment and resilience following war and political conflict (Dimitry, 2012; Gewirtz et al., 2008; Qouta et al., 2008). Additional aspects of parenting may be critical in regards to certain types of exposure. Media exposure, discussed earlier, provides an example of parenting practices that can mitigate risk, when parents actively increase their monitoring and restriction of child exposure to upsetting images on television or other media (Saraiya et al., 2012).

Parents who facilitate communication about a traumatic event, whether children experienced it directly or through media, may also help children to more effectively process traumatic reactions (Gil-Rivas, Silver, Holman, McIntosh, & Poulin, 2007; Otto et al., 2007).

Moderating effects of parenting (indicated by significant interaction effects) have been observed in some studies. Although studies on the protective mechanisms of parenting in war and terrorism remain limited (Gewirtz et al., 2008), positive parenting, including consistent praise and discipline, had a moderating effect on posttraumatic stress symptoms for Israeli and Palestinian youth exposed to political conflict who were studied longitudinally. Children who received low levels of positive parenting had more PTSD symptoms (Dubow, Huesmann, et al., 2012).

Generally, negative parenting may have damaging effects on children following exposure to war, terrorism, and political conflict. After 9/11, negative parenting, including impatience and parenting difficulties, predicted children's elevated PTSD symptoms (DeVoe et al., 2011). Other risky aspects of parenting for increased PTSD symptoms include anxious attachment between parents and children (Finzi-Dottan, Dekel, Lavi, & Su'ali, 2006) and overprotective, controlling, or inconsistent parenting (Comer et al., 2010; Hendricks & Bornstein, 2007). Such findings indicate that quality of parenting and the parent-child relationship can serve as both powerful protective factors for child adjustment and significant sources of risk.

Severe exposure to trauma can undermine the functioning of parents. It is therefore not surprising that mental health problems in parents, such as PTSD and depression, predict worse adjustment in children (e.g., Barber & Schluterman, 2009; Chemtob et al., 2010; Feldman & Vengrober, 2011). After the 9/11 terror attacks, child adjustment in some cases appeared to be more strongly influenced by parents' degree of exposure rather than children's own exposure (Hoven et al., 2005). This transmission of stress reactions within families also can work both ways. Parents have exhibited increased PTSD due to exposures their children endured alone, such as during the school hostage crisis in Beslan (Scrimin et al., 2006).

Perhaps the most extreme and compromising situation for children occurs when parents are killed or injured; however, even these situations have differential effects on children. For example, in contexts of ongoing war, maternal death directly predicted child maladjustment but paternal death indirectly predicted child maladjustment through increased vulnerability to war-related stressors (Drury & Williams, 2012).

Other changes in the family system also can be harmful for children's adjustment, through escalating family violence or interparental conflict. In Belfast, Ireland, political violence in the surrounding community indirectly affected children's internalizing and externalizing symptoms via the effects of the violence on marital conflict and children's resulting emotional insecurity of the interparental relationship (Cummings et al., 2012). After 9/11, increased marital tension was a salient predictor of children's PTSD symptoms (DeVoe et al., 2011). Tension between two parents may further undermine the recovery context. Single parenting, however, in the aftermath of trauma also may increase vulnerability if parents are struggling to manage their own and their children's stress reactions without the support of another parent (Kaniasty, 2011).

In sum, changes at multiple levels of family systems, such as parent-child and interparental relationships, can transact and spill over to compromise parent and child individual adjustment and parenting (see Bornstein, Chapter 3, this *Handbook*, this volume). The extent of vulnerability within family systems as well as the potential for child recovery and resilience may be graded, and depend on the extent of parent and child exposure, factors influencing relational change, and resulting psychopathology.

### ***Recovery Context***

Many reviews have emphasized the crucial importance of the recovery context for the immediate and long-term well-being of children, youth, and families (Masten & Narayan, 2012). Research also continues to support the importance of *normalizing* everyday life for children and families, by resuming school, providing opportunities to play and socialize, restoring family routines, and supporting cultural or religious practices (Barber, 2009a; Franks, 2011; Masten & Osofsky, 2010). Boothby et al. (2009) described key components of the rehabilitation efforts for the 39 child soldiers brought to the Lhanguene Center in Maputo, the capital city of Mozambique, for recovery and then reintegration with relatives. Most were accepted by their communities, and all went through traditional ceremonies on their return, which cleansed them of what they may have done during the war. Boothby and colleagues described the importance of these rituals for both the individual boys and the communities in the process of rebuilding community trust and cohesion (2009). These ceremonies signified forgiveness or relief from shame. The recovery of child soldiers also appears to depend on resuming normal life. This might include going to work in the fields or to school; the essence appears to be returning

to normal life and a chance to be, in the words of one child soldier, "like everyone else" (Boothby et al., 2009, p. 248).

Similar observations have been made in refugee camps and resettlement efforts. War and political violence can lead to years of displacement either within the conflict region or other locations. For children, returning to country of origin, or, conversely, assimilating into a new culture, and feeling accepted again within the school or peer context can be critical factors in promoting positive readjustment (Fazel et al., 2012; Reed et al., 2012).

### **Refugees and Resettlement**

Refugee children represent a heterogeneous population in terms of their traumatic experiences and recovery needs, yet many have endured the dual risk of exposure to trauma and loss of their homes. Systematic reviews have summarized the experiences and needs of refugee children in low-, middle-, and high-income countries (APA, 2010; Fazel et al., 2012; Reed et al., 2012). The most typical profile of a refugee child is to have experienced a host of traumatic events pre- and postdisplacement and to be relocated for long periods of time in unsafe refugee camps in low- or middle-income countries. Only a small percentage of displaced children, approximately 0.5 of the total 18 million that are currently estimated to be displaced, are sent to high-income countries (Reed et al., 2012), including the United States (APA, 2010).

Many refugee children have been exposed to multiple types of atrocities, including exposure to violence in their countries of origin, separation from or loss of caregivers, forced displacement from their homes, and resettlement in refugee camps where levels of rape, child maltreatment, and deprivation of basic needs are high. Investigators have noted that number of lifetime exposures, including pre- and postmigration experiences, may be the best reflection of overall dose of exposure (Fazel et al., 2012; Reed et al., 2012). Experiences of continued mobility or discrimination following resettlement, even to high-income countries, influence adjustment, as do the quality of health care, schools, and community safety. Refugee children who are not accompanied by adults are at elevated risk for long-term psychological maladjustment and postmigration homelessness, delinquency, crime, and prostitution, especially if they are adolescents. Overall, findings indicate that the combination of exposure to violence and displacement has the potential to profoundly disrupt multiple levels of these children's development and ecology, especially if displacement is characterized by chronic instability,

language and cultural barriers, and recovery contexts that are traumatic and low in resources. For refugee children, pathways to risk and resilience largely depend on the quality of recovery contexts, including the quality of family support and resources (Betancourt, Newnham, Layne, et al., 2012; Fazel et al., 2012; Reed et al., 2012).

### Intervention and Prevention Research

Given the diversity of experiences that characterize children's exposure to war, terrorism, and political conflict, the challenges of implementing research in these contexts, and the array of mediating and moderating processes involved, it is not surprising to find that knowledge remains limited on how to intervene effectively. Peltonen and Punamäki (2010) conducted a meta-analytic review of the extant literature on the effects of preventive interventions for children in armed conflict. They reported that only four studies met the gold-standard criteria of random assignment to intervention versus control groups.

Two of these studies were conducted with Bosnian children, although the intervention contexts differed markedly. Dybdahl (2001) implemented an intervention to promote mother-child interactions in Bosnian families displaced or living in refugee villages. The comparison group received only medical care while the treatment group also received an intervention to promote maternal warmth and support to 5- and 6-year-old children. Maternal mental health and child physical health improved more in the treatment group than the comparison group.

Layne et al. (2008) conducted an intervention on adolescent Bosnian students. The control treatment included classroom-based psychoeducation and skills training, while the treatment group also received trauma- and grief-focused group treatment. Both groups reported significant improvements in posttraumatic stress and depressive symptoms, but those receiving the additional group therapy showed further significant improvement in grief reactions.

The other two RCT studies reviewed by Peltonen and Punamäki (2010) found effects of treatment compared to waitlist control groups. In one study, Israeli elementary school children had significantly lower posttraumatic stress symptoms in the treatment group following a school-based intervention with cognitive behavioral therapy elements (Berger, Pat-Horenczyk, & Gelkopf, 2007). In the other study, group interpersonal psychotherapy resulted in significantly fewer depressive symptoms in Ugandan adolescent

girls (but not boys) compared to the controls (Bolton et al., 2007).

Since the Peltonen and Punamäki (2010) review was completed, a number of additional school-based RCTs have been conducted. A teacher-based cluster-RCT intervention was conducted with Israeli children ages 8 to 13 randomized by classroom. Treatment included elements of cognitive-behavioral therapy (CBT) and promoting coping skills, perceived safety, and creative expression (Qouta, Palosaari, Diab, & Punamäki, 2012). Compared to waitlist controls, boys showed significant reductions in PTSD symptoms. Girls also showed substantial reductions in PTSD symptoms but only if they displayed lower levels of peritraumatic dissociation at baseline.

A classroom-based cluster RCT for Indonesian children (Ages 7 to 15 years), incorporating CBT techniques, trauma narratives, psychoeducation, and creative expression, contributed to improvements in PTSD and hope (Tol et al., 2008). Two additional school-based interventions, one in Nepal (Jordans et al., 2010) and one in Sri Lanka (Tol et al., 2012), utilized aspects of CBT and creative expression or play experiences and did not find significant improvements in primary psychiatric indicators. However, both studies reported some evidence of sex differences on other treatment indicators, including general improvements in boys' aggression and anxiety symptoms and girls' prosocial behaviors (Jordans et al., 2010; Tol et al., 2012).

Another school-based psychosocial RCT, involving cognitive-behavioral and creative expression applications, was conducted with war-exposed Indonesian children aged 8 to 13 (Tol et al., 2010). This study is unusual in its focus on positive adaptation, finding improvements among treated compared to control participants in positive coping strategies, hope, and support from peers during play. In relation to PTSD symptoms, Tol et al. also found a sex by treatment interaction: girls exhibited greater decreases in PTSD symptoms than boys as a result of the treatment. Generally, however, findings regarding sex differences should be interpreted with caution until replication studies in various contexts have been conducted.

Other RCT studies also include interventions outside of the school domain that focused on adapting evidence-based treatments. These include two RCTs conducted with former child soldiers. Ertl, Pfeffer, Schauer, Elbert, & Neuner (2011) adapted narrative exposure therapy (NET) to youth aged 12 to 25 years in Uganda. NET is a short-term treatment that combines techniques of testimonial therapy

(i.e., autobiographical narratives) and trauma exposure therapy for PTSD (Neuner et al., 2008). Compared to a group that received academic assistance and supportive counseling and the waitlist control group, children in the NET condition displayed significant decreases in PTSD symptoms. These effects were observed using therapists from the communities with no mental health or medical training backgrounds.

Also conducted in Uganda with former child soldiers, Betancourt, Newnham, Brennan, et al. (2012) randomly assigned 14- to 17-year-old youth, approximately one half whom had been abducted by the Lord's Resistance Army, to receive interpersonal therapy in a group format (IPT-G), creative play exercises, or a waitlisted treatment. They found that abduction status interacted with sex to predict treatment outcome, such that IPT-G was most effective in decreasing depression in abducted girls. Decreases in depression were also noted in abducted boys, but not in nonabducted boys.

Additional studies supported the strategies of NET for children (KIDNET), adapted from the narrative exposure therapy techniques described above (Neuner et al., 2008), and trauma-focused CBT. Implementation of KIDNET compared to a waitlist control group was effective in reducing the PTSD symptoms of refugee children exiled in Germany from organized violence in their countries of origin (Ruf et al., 2010). Finally, although not an RCT, a needs-based study conducted by the Child and Adolescent Trauma Treatments and Services Consortium (CATS Consortium, 2010) through the New York State Office of Mental Health to target 9/11-exposed children examined the differential effects of trauma-focused or brief CBT depending on children's symptom levels. Trauma-focused CBT was found to be effective in reducing children's moderate to severe trauma symptoms, and brief CBT was found to reduce children's mild trauma symptoms, which highlights the promise of interventions tailored to level of initial impairment.

Innovative strategies, incorporating a breadth of techniques, are also emerging with promising results. A teacher-delivered, manualized intervention for children, Enhancing Resiliency Among Students Experiencing Stress (ERASE-Stress) was conducted following chronic exposure to rocket attacks in Israel (Berger, Gelkopf, & Heineberg, 2012; Gelkopf & Berger, 2009). This program resulted in significant improvements in PTSD symptoms, somatic problems, functional impairments, and anxiety

levels. In addition to successful implementation during the ongoing threat, strengths of ERASE-Stress included the breadth of components, cultural adaptations, and fidelity checks during teacher delivery (Berger et al., 2012).

### *Stress Inoculation Training*

The majority of RCTs for mass violence exposures have focused on the aftermath of conflict or terror attacks. However, in regions at high-risk for conflict, it is possible to implement prevention efforts that can be subsequently evaluated in the event of an upsurge of violence or attack. These efforts are conceptualized as stress-inoculation training (SIT). An example is provided by intervention in areas of Israel characterized by frequent rocket attacks (Wolmer, Hamiel, & Laor, 2011). School-based, teacher-led training for children aged 8 to 12 included manualized exercises in coping enhancement, stress management, affect regulation, and processing of experiences. Three months later, there was a surge in shelling, Operation Cast Lead, in the region. Subsequently, PTSD symptoms among students at six schools who received the training were compared with students at six schools with the same level of exposure who did not receive the training. Students in schools that received this preventive intervention had significantly fewer PTSD symptoms.

There is considerable advancement in knowledge from the increasing number of high-quality intervention studies implemented in regions affected by political conflict. It is striking that so few of these studies have targeted the needs of parents, given the widespread agreement on the importance of positive parenting as a protective system for children. However, in light of the challenges of conducting this type of work, it is understandable that the priority has been on targeting children. There also continues to be a discrepancy between the number of children affected by war and political conflict that need interventions for mental health and the relative scarcity of sound intervention studies. Of necessity, many humanitarian interventions to help war-affected children and youth continue to be based on a combination of evidence and pooled wisdom from experience (APA 2010; Masten & Narayan, 2012).

### *Preventing War and Promoting Peace*

There is increasing attention to the broad goals of promoting conflict resolution and peace, in conjunction with preventing war and ongoing conflict, through programs or



education for children and youth (Punamäki, 2009; Smith, 2010; UNICEF, 2009). UNICEF provides teaching materials on “Peace Education” for children and video examples of activities, such as sports, intended to reduce conflict and promote understanding among children from regions in conflict. These efforts range from general attention to children’s rights or affording children and youth a voice in resolving conflicts to specific efforts to prevent youth violence by training younger children in self-control, empathy, or other qualities to reduce the probability of violence involvement. Efforts to reduce intergroup conflicts in schools among different ethnic or cultural groups or “sides” in an ongoing conflict could also be viewed as a peace-promoting strategy (Spiel & Strohmeier, 2012). An important venue for future research may be to develop and test the effectiveness of programs to promote peace and reduce intergroup violence.

## CHILDREN IN NATURAL AND TECHNOLOGICAL DISASTERS

Since the turn of the new century, millions of children and families have faced natural and technological disasters. Research and reports from the field continue to indicate that most children, given adequate protection and support, will show resilience following disasters. However, exposure to prolonged or complex disasters can result in lingering psychological effects on child development. (Kessler, Galea, Jones, & Parker, 2006; H. J. Osofsky, Osofsky, Kronenberg, Brennan, & Hansel, 2009; Weems et al., 2007). Large scale, complex disasters, such as Hurricane Katrina (2005) or the Fukushima Daiichi nuclear disaster following the 2011 earthquake and tsunami in Japan, which cause massive disturbances across many system levels, are expected to have significant impacts on children over decades, if not multiple generations. Lessons and information gleaned from the *Exxon Valdez* oil spill (Gill, Picou, & Ritchie, 2012; Wohlforth, 2010) suggest that the vulnerability of children and families, as well as whole communities, to the psychological, social, economic, and ecological consequences of these technological disasters can extend well into the future.

Some major disasters occur with very little warning but cause large scale destruction, as did the massive “megathrust” Sumatran-Andaman earthquake in Indonesia on December 26, 2004, that triggered major tsunami waves in the Indian Ocean. Over 200,000 people were killed and most were caught by surprise because there were no

tsunami-warning systems in place. In this kind of situation, the main parameters of exposure are determined by the characteristics of the disaster itself, including magnitude and the individual’s proximity to the epicenter. Magnitude can be indexed by physical characteristics (e.g., “moment magnitude” or, formerly, the Richter scale, of an earthquake; level F1 to F5 of a tornado), death toll, or scope of destruction path. By all these indicators, this earthquake was one of the worst disasters in recorded history. Parents may not have time to connect with children, resulting in separations, and lost or unidentified children.

Other natural disasters come with more warning to regions long-accustomed to these events. Exposure to relatively “expected” disasters may vary by differences in community, family, or individual characteristics, as well as the features of the unfolding disaster itself. Families make choices about whether or not to evacuate and more advantaged families may have additional options. Poverty also could relate to living in more dangerous regions or areas prone to storm surges, wildfires, or hurricanes (J. D. Osofsky, Osofsky, & Harris, 2007). Child exposure would be expected to relate to caregiver exposure and family and community affordances.

Large-magnitude disasters often trigger a cascade of catastrophic events that increase cumulative disaster dose. For instance, Katrina was compounded by the collapse of the levee system as well as human error during the response (Knabb, Rhome, & Brown, 2006). The earthquake and subsequent tsunami that struck Japan on March 11, 2011 caused a meltdown of the Fukushima Daiichi nuclear power plant, resulting in a “level 7” (highest level) nuclear disaster (Sugimoto, Krull, Nomura, Morita, & Tsubokura, 2012; Watanabe, 2012) and what has been called a “triple catastrophe” (Bromet, 2011). In this case, exposure effects are still unfolding and there are little data yet available on the effects of this complex disaster on children and families. However, long-term generational consequences are expected. Additionally, in Japan, radiation exposure carries special significance in a society profoundly affected by the nuclear bombs dropped on Hiroshima and Nagasaki (see Bromet, 2011; Lifton, 1967/1991).

Disasters, like war and political violence, can generate large numbers of displaced families and children, resulting in temporary housing, multiple moves, and permanent relocation. Many people across the world watched the media broadcasts of the relocation and recovery processes following Katrina, including emergency shelter in the Superdome, temporary housing on ships, the challenging conditions of prolonged residence in “temporary” trailer

parks, and the relocation of many families to other states (J. D. Osofsky et al., 2007). In Japan, a large area around the Fukushima nuclear power plant was contaminated with radiation, and the radius of the danger zone expanded as the crisis unfolded (Sugimoto et al., 2012). These situations pose ongoing risks, with uncertain dangers for families, children, and pregnant mothers.

Many aspects of the recovery context matter for response to natural and technological disasters, including the actions of individuals, families, communities, societies, and global agencies to respond and support recovery, discussed further below. Disasters like Katrina and the earthquake/tsunami events of 2004 in Indonesia and the Indian Ocean and 2011 in Japan elicit responses on many levels, from local to international. How children fare depends on the actions of many people and systems, as well as individual differences in the children themselves.

### Variations in Exposure and Response

Many child survivors of large-scale disasters experience adversities similar to children affected by large-scale political conflicts, including losses of parents, homes, schools, communities, friends, and overall stability and routines that are important for children's healthy and adaptive development (J. D. Osofsky, 2011; J. D. Osofsky et al., 2007). Much like children exposed to violent political conflict, the ways in which children respond and recover from exposure to disasters vary as a function of the magnitude of exposure, characteristics of the child (including age, sex, and cognitive skills), developmental timing, and the function of family and community as support systems.

### *Dose-Response Gradients*

Studies show that the combination of exposure to natural disasters and the resulting experiences of loss and ongoing stress negatively affect young children's psychological outcomes in diverse ways (J. D. Osofsky, 2011; DeVoe et al., 2011). For example, although children's symptoms of posttraumatic stress generally decrease over time, level of exposure, loss, and ongoing stressors affect the severity and longevity of children's symptoms (McLaughlin et al., 2009; H. J. Osofsky et al., 2009). As demonstrated in a study by Swenson et al. (1996), hurricane-related distress decreased over time for the majority of 2- to 6-year-old children. However, children who had lost their homes as a result of the hurricane or who experienced ongoing family stressors such as a marriage or a death were more likely to have increased levels of posttraumatic stress 14 months after the hurricane.

Proximity effects to the epicenter or areas of greatest destruction have been consistently observed in natural and technological disasters, as noted above. Dose-response gradients following natural disasters may reflect cumulative exposures to disasters, or consecutive, compounding exposures. Data gathered after the 2010 Gulf oil spill in areas previously impacted by Hurricane Katrina and subsequent hurricanes indicate that children's vulnerability to mental health problems may increase with exposure to multiple traumatic experiences and disasters (H. J. Osofsky, Osofsky, & Hansel, 2012). Analyses of over 3,500 elementary and high school students screened in 2010–2011 indicated that 25% met the cut-off for mental health services with significant differences between children living in oil spill affected areas (50% meeting the cut-off) and those living in areas that were not impacted (21% meeting the cut-off; Hansel, Osofsky, Osofsky, Reuther, & Louisiana State University Health Sciences Center Department of Psychiatry, 2011). Evidence from the same research suggests cumulative effects on many parents as well. Children may have been affected indirectly by the functioning of their parents, as well as through direct exposure to trauma. Families, in turn, may be affected by the corrosive effect of lingering devastation on their communities.

For many children experiencing disasters, their once thriving communities, including homes, neighborhoods, grocery stores and playgrounds, often are no longer functional; many children and families experience multiple moves and changes in schools, separation from friends and family members, and elevated interfamilial stress from tension, conflict, and unemployment (Kaniasty, 2011; H. J. Osofsky et al., 2009; J. D. Osofsky et al., 2007; J. D. Osofsky & Osofsky, 2013; Watanabe, 2012). For children impacted by the 2011 triple disaster in Japan, routine life became confusing and upsetting when the simple act of playing outside was either prohibited or severely restricted due to concerns about radiation exposure (Watanabe, 2012). Families may be threatened with severe economic difficulties, evaporation of traditional support systems, and loss of their identities as they must learn to thrive in other communities with fewer economic and health resources. In those communities near the water that depended on fishing for economic survival, the tsunami and nuclear disaster in Japan and the oil spills in Louisiana have threatened the tranquil fishing and wildlife areas and multigenerational ways of coastal living. Investigators of the *Exxon Valdez* oil spill have suggested that long-term effects in youth were closely tied to the broader impact of the oil spill on the

family and community identity, as well as individual identity (Gill et al., 2012; Palinkas, 2009; Picou & Gill, 1996).

### Individual Differences

Similar to the literature on children's responses to other traumatic experiences, variations in response and recovery have been observed in relation to individual differences. However, it is interesting to note that in natural and technological disasters, which are more likely to have acute onset over a large area of exposure, variations in short-term exposure could depend less on individual differences and more on relatively uncontrollable aspects of the disaster. In these sudden-onset disasters, the role of individual differences may play a greater role on response variations or the recovery context than they do in initial exposure.

Studies on response by age generally continue to be mixed. For instance, in a series of studies with children Ages 9 to 15 after the 2004 tsunami in Sri Lanka, younger children exhibited more positive adaptation, defined as more psychosocial competence and less psychopathology, than older children (Catani et al., 2010). These effects held after accounting for cumulative exposure, although generally children who were exposed to more types of trauma fared worse. In contrast, in another study that compared children of three different age groups (Ages 9–11, 12–14, and 15–18), the youngest group of children exhibited the highest levels of PTSD symptoms (Kronenberg et al., 2010). Other studies have found that older children (e.g., teens) may have more depressive symptoms after exposure to a tsunami (Thienruka et al., 2006) and higher rates of PTSD after an industrial disaster (Godeau et al., 2005).

In spite of the mixed findings connecting age and risk for psychopathology, the nature of manifested traumatic reactions may vary by development at time of exposure (Franks, 2011; Narayan & Masten, 2012). For school-age children, common reactions to disasters include anxiety, worry about family and friends, physical complaints, disruptive behaviors, aggression or extreme withdrawal, problems with concentration, mood swings and depression, posttraumatic stress symptoms, and sleep problems including nightmares. For adolescents, in addition to physical complaints, disruptive and high-risk behaviors are common, including interpersonal aggression, school truancy and academic decline, peer problems, sleep disturbances, substance use, and risky sexual behaviors. In the section on interventions, we discuss treatments found to be most helpful with children of different ages.

"Project Ice Storm" is a rare study designed to examine the effects of prenatal maternal stress on child outcomes in

regard to developmental timing of exposure. Investigators examined the birth outcomes of 172 children whose mothers were pregnant during or shortly before a major ice storm in Canada in relation to normative data and individual differences (King & LaPlante, 2005; Dancause et al., 2011). Results were consistent with the possibility of modest but complex effects of maternal stress on birth outcomes (e.g., length, weight, head circumference), depending on child sex, exposure timing, and mothers' perceived stress levels.

Sex differences also continue to present a mixed picture. In one study of an industrial disaster, girls exhibited higher rates of PTSD than boys, regardless of whether they were preadolescent or adolescent age (Godeau et al., 2005). Following a cyclone in India, no significant sex differences were noted in overall rates of PTSD, depression, or anxiety; however, sex differences in specific traumatic responses were observed, such that girls perceived more guilt, whereas boys exhibited more avoidance and intrusive memories and dreams (Kar & Bastia, 2006). In the second and third years after Hurricane Katrina, girls were also generally observed to have less adaptive recovery patterns, characterized by more symptoms of PTSD and depression than boys (Kronenberg et al., 2010; Weems et al., 2010). However, another study after Hurricane Charley, a strong Category 4 hurricane that struck Charlotte County, Florida, in August 2004, found that girls only exhibited elevated PTSD compared to boys after the first but not the second year (La Greca et al., 2010).

Other studies have further complicated the sex differences picture by finding that girls may perceive greater threats or distress than boys but not actually display different levels of symptoms (McDermott, Lee, Judd, & Gibbon, 2005; Norris, Friedman, Watson, Byrne, et al., 2002). Taken together, results suggest that although females may generally be at higher risk for PTSD and related internalizing symptoms following traumatic events, there are a host of other factors that influence variations in observed responses by sex, including cognitive and perceptual influences, parental responses, cultural influences, and biological factors (Furr et al., 2010; Proctor et al., 2007; Vigil et al., 2010).

The individual response to a disaster may vary depending on the type of disaster. For example, the majority of the literature on hurricanes indicates that children are at high risk for symptoms of depression, anxiety, and PTSD (Goenjian et al., 2001; Kessler et al., 2006; H. J. Osofsky et al., 2009; J. D. Osofsky et al., 2007). A number of disaster studies have documented symptoms of PTSD in children who have experienced natural disasters, including earthquakes, tsunamis, and hurricanes (Goenjian et al.,

2005; John, Russell, & Russell, 2007; Kolaitis et al., 2003; Piyasil et al., 2007). Many of these studies have reported comorbid symptoms of depression in children following natural disasters. Although there is overlap in PTSD and depression symptoms, including anhedonia, sleep difficulties, and problems with concentration, irritability, and restricted affect, research has demonstrated the distinct presence of each disorder following disasters (Goenjian et al., 2001; Kolaitis et al., 2003; Roussos et al., 2005). For example, a study of PTSD and depression in children ages 7 to 17 who experienced a supercyclone in India found that most children with PTSD did not meet criteria for depression, and many children with depression did not meet criteria for PTSD (Kar et al., 2007).

Individual differences in perceptions of threat may also affect rates of child psychopathology following natural disasters. One study found that children exposed to a tsunami developed higher rates of PTSD if they perceived high levels of threat, fear, or danger to themselves or their family members (Thienruka et al., 2006). Similar relations between perceived threat and PTSD symptoms were also observed after a bushfire disaster (Yelland et al., 2010).

Individual differences, such as aspects of cognitive functioning, also may be protective for postdisaster recovery. Children who perceived themselves as competent had more positive recovery patterns after Hurricane Floyd (Cryder, Kilmer, Tedeschi, & Calhoun, 2006). Similarly, a study conducted after Hurricane Katrina found that children's constructive thoughts about the event contributed to posttraumatic growth. Interestingly, negative and ruminative thoughts also were associated with more positive outcomes, perhaps because of the meaning making that occurred (Kilmer & Gil-Rivas, 2010). Another study conducted in the aftermath of Katrina found that children's strong effortful control abilities buffered them from PTSD symptoms (Terranova, Boxer, & Morris, 2009). Certain cognitive skills may also serve as protective and vulnerability factors depending on the context and the age of the child. After Katrina, children with stronger theory of mind skills had more coping skills; however, they also experienced more intrusive thoughts (Sprung, 2008).

### ***Mediating and Moderating Processes in the Family***

The recovery processes following natural and technological disasters may be similar to those following exposure to political conflict, and the same family functions appear to play a key role in mediating or moderating child adaptation. Positive parent-child relationships helped to alleviate adolescents' symptoms of PTSD and depression following a tsunami in Sri Lanka; however, increased

rates of maternal depression compromised adolescents' psychological adjustment (Wickrama & Kaspar, 2007). Aspects of parent-child relationships can also be harmful for children's postdisaster functioning, such that maternal overprotectiveness following a flood in Poland exacerbated children's PTSD symptoms (Bokszczanin, 2008).

The literature also highlights the primary role that parent-child relationships have in buffering children's responses to natural disasters. Proctor et al. (2007) assessed 4- to 5-year-old children who experienced an earthquake and found that their levels of posttraumatic stress were related to extent of exposure, including experiences of physical injury, damage to the home, displacement from home or school, loss of possessions, and financial stressors. The links between exposure and adjustment were moderated by caregiving relationships, including caregivers' levels of stress and positive and negative behaviors with children during play. At high levels of child exposure, however, the protective effects of parenting were not as strong, suggesting that even the protective systems of parenting have limitations. Nevertheless, many children, and particularly young children, are likely shielded from disasters by effective parental protection but show increased vulnerability when caregiver function or parent-child relationships are compromised (J. D. Osofsky, 2011; Proctor et al., 2007; Scaramella, Sohr-Preston, Callahan, & Mirabile, 2008).

### ***Pathways to Recovery and Qualities of the Recovery Context***

Longitudinally, studies have focused on patterns of recovery versus continued impairment and the factors that influence these pathways. H. J. Osofsky and colleagues (e.g., H. J. Osofsky et al., 2012; H. J. Osofsky & Osofsky, 2013) carried out child mental health needs assessments with over 40,000 elementary and high school students between 2005 and 2011 in collaboration with schools in heavily impacted areas following Hurricane Katrina and the Gulf oil spill. Using a modified National Child Traumatic Stress Network (2005) Hurricane Screening assessment measure, they found that self-reports of PTSD and depression symptoms in children decreased over several years, but then increased again after exposure to another hurricane and damaging effects of the Gulf oil spill. Further, Kronenberg et al. (2010) studied recovery patterns following Hurricane Katrina in 387 students Ages 9 to 18 from heavily impacted areas. The vast majority of students (72%) reported being on either stress-resistant pathways or the "breakdown and recovery" pattern. The students reporting breakdown without recovery (23%), and the small percentage (4%) showing delayed breakdown,



endorsed more consultations with mental health therapists, violence in the family and neighborhood, prior losses or trauma, and post-hurricane losses, all of which would make them more vulnerable.

The effects of relocation on symptoms were also studied by comparing 525 students from New Orleans to 270 students from Baton Rouge (80 miles from New Orleans) with matching pre-Katrina zip codes (Hansel, Osofsky, Osofsky, & Friedrich, 2013). Relocated students who had been unable to return to New Orleans had more symptoms of posttraumatic stress and depression. Younger relocated students reported fewer symptoms compared to older students. In those who returned to their same zip code, older students reported fewer symptoms. In addition to illuminating key differences in risk and recovery patterns depending on relocation circumstances and age, this study emphasized the need for school-based services not only in acute disaster areas, but also in areas where survivors are relocated.

Using 3-months post-Hurricane Andrew data of 568 exposed children and latent growth mixture modeling, La Greca et al. (2013) identified three trajectories of posttraumatic stress reactions: (1) resilient (37%), (2) recovering (43%), and (3) chronic distress (20%). Odds ratios further revealed that in comparison to children on the resilient trajectory, children on the recovering and chronically distressed trajectories were more likely to be girls and to report higher anxiety and lower emotion regulation. Further, compared to the recovering trajectory, children in the chronically distressed trajectory had greater odds of reporting high anxiety, less social support, more intervening life events, and more use of poor emotion regulation strategies.

There also is research on the recovery context of communities affected by chemical and technological disasters. Of particular relevance to understanding outcomes following the Gulf oil spill are data from the *Exxon Valdez* oil spill in Alaska in 1989. In both cases, there were deep concerns about the ability to rebuild and continue multigenerational ways of life. Reported mental health problems from qualitative interviews immediately after the Deepwater Horizon oil spill included anxiety, depression, increased use of alcohol and drugs, family difficulties, and indications of the beginning of a “corrosive community” (Palinkas, 2012). The most challenging concerns for families and communities following technological disasters as compared with natural disasters are uncertainty about the future; mistrust of information about the disaster; multiple layers of destruction to environment, property, livelihood, and economy; fears about toxic exposure and

future health problems; lingering traumatic stress from past disasters compounded by economic concerns; and psychological effects of the technological disaster on an already vulnerable community (H. J. Osofsky, Palinkas, & Galloway, 2010).

In summary, there has been progress in understanding children’s reactions to disasters, both in regard to risk factors that predict persistent, long term traumatic stress reactions and protective factors that may mitigate these reactions. There is less progress when it comes to understanding whether (and how) children’s reactions may be effectively reduced via psychological assessment and intervention. Bleaker still is our understanding about whether (and how) targeting risk factors, protective factors, or both may help prevent the development of maladaptive adjustment following disasters.

### Intervention in the Aftermath of Disaster

As discussed throughout this chapter, responding adequately to the psychological needs of children in the aftermath of disasters is challenging. Similar challenges confront investigators who plan to conduct intervention research in these contexts. For example, in the immediate postimpact phase of a disaster, when chaos and distress are intense, a priority is placed on restoring safety, helping loved ones reconnect, and returning toward some semblance of normality (McFarlane & Williams, 2012). With the passage of time, children’s mental health needs may appear on the radar of concerned stakeholders, including parents and teachers. However, addressing children’s needs in the context of RCTs and all that entails (e.g., obtaining informed consent, being randomized to a potentially less effective treatment, completing detailed protocols, and collecting long-term follow-up data) is not a priority of stakeholders seeking help for distressed children (Forman-Hoffman et al., 2013; La Greca & Silverman, 2006; Masten & Osofsky, 2010). Direct service delivery with no “experimental strings” attached is more likely to be desired. In light of these challenges, it is not surprising that the intervention literature on disasters continues to be sparse.

Rolfesnes and Idsoe (2011) conducted a meta-analysis reviewing school-based interventions for PTSD symptoms due to natural or man-made disasters and repeated war exposure, in addition to sudden death of a loved one, car accidents, community violence, or catastrophic illness/injury. Inclusion criteria required studies to use standardized instruments and to have pretreatment (not predisaster)

baseline data. Nineteen studies conducted in nine countries were found, and seven dealt with natural disasters (eight focused on war or political conflict).

Overall, a medium to large effect size (Cohen's  $d = .68$ ) was found for PTSD symptom reduction across the 19 studies, suggesting potential utility of school-based interventions in the aftermath of child trauma exposure including disasters. The promise of CBT procedures was noted, which were the most common elements in the majority of the studies. This observation has been made in earlier reviews as well (e.g., La Greca & Silverman, 2006; Stallard, 2006). Related to this point, Rolfsnes and Idsoe (2011) cited three studies that used other procedures (i.e., play/art, mind-body skills, eye movement desensitization and reprocessing), which yielded promising results. Given that all three of these studies also utilized aspects of CBT, however, more research is needed before conclusions can be reached about the efficacy of these other procedures (La Greca & Silverman, 2006; Rolfsnes & Idsoe, 2011; Stallard, 2006).

Forman-Hoffman et al.'s (2013) review focused on similar types of trauma events, referred to as "nonrelational traumatic events," and required that studies include traumatic stress symptoms or disorders among the outcomes. In addition to school-based interventions, clinic and community based studies were included, as well as pharmacological trials. The review identified 21 psychological and pharmacological trials as either low or medium risk of bias (i.e., free of methodological flaws that would otherwise invalidate the findings). The trials targeted children exposed to natural disasters (e.g., hurricane, tsunami, earthquake), car accidents, terrorism, and war. Close to half of the studies were conducted in countries other than the United States.

Forman-Hoffman et al. (2013) concluded that psychological treatment is better than no treatment following child exposure to nonrelational traumatic events and it does not seem to be associated with iatrogenic effects. The latter conclusion was drawn based on reviewing trials with low to medium risk of bias and that were grounded in theoretical, empirical, or clinical foundational principles. This point is emphasized in light of the growing evidence that critical incident stress debriefing, which encourages child expression of feelings and normalizing disaster responses (Chemtob, Tomas, Law, & Cremniter, 1997), is more likely to be harmful than helpful (Klasen & Crombag, 2012; Rose & Bisson, 1998).

The reviews of both Rolfsnes and Idsoe (2011) and Forman-Hoffman et al. (2013) acknowledged that little

effort has been made to replicate specific treatments across studies. Instead, each study has focused on evaluating a particular "brand" of psychological therapy, though most contain elements of CBT (e.g., La Greca & Silverman, 2006; Rolfsnes & Idsoe, 2011; Stallard, 2006). No positive evidence was found for pharmacological treatments. Both reviews also highlighted several methodological difficulties with the existing research base that make it difficult to draw comprehensive and valid conclusions. These difficulties include small samples; overreliance on child self-report rather than using parent or teacher reports; lack of multimethod (rating scales, interviews, observations) assessments (Silverman & Ollendick, 2005); short-term follow-ups; lack of systematic follow-ups and independent evaluators; and limited information on whether measures were validated in the target populations. Many studies also did not employ manualized treatments or assess treatment fidelity. Much heterogeneity is evident in the inclusionary criteria of studies with respect to baselines levels of post-traumatic stress symptoms and PTSD required for study eligibility. Such heterogeneity poses interpretative challenges: If baseline symptoms are low, it may be difficult to detect improvement.

Three general conclusions about interventions for children in the context of disaster should be highlighted based on these two reviews and related research. First, there is evidence of iatrogenic effects of interventions. Critical incident stress debriefing may lead to harmful effects (Bonanno et al., 2010; Wei, Szumilas, & Kutcher, 2010). In addition, these types of interventions are likely too brief to sufficiently address the multiple, complex, and cascading stressors from disasters, which may last for months or years (La Greca & Silverman, 2006).

Second, observations in the field indicate that psychological first aid (PFA) may be useful for assisting children as well as adults after disaster. PFA was developed for PTSD by the National Child Traumatic Stress Network and the National Center as a low-risk, supportive intervention for the general population following large-scale trauma exposures, and a second edition of this approach is now available (see <http://www.nctsn.org/content/psychological-first-aid>). Although this approach needs a systematic controlled evaluation, the content of PFA is widely regarded as evidence-informed and much more congruent with the literature on children in war and disaster than critical incident debriefing (Bonanno et al., 2010; Masten & Narayan, 2012). Many of the core techniques included in PFA are based on the factors described in this chapter that support children's recovery (e.g., connection with social

support, promoting effective coping strategies). There is a PFA application for cell phones and adaptations for use by schools, religious professionals, medical reserve corps, youth, and families experiencing homelessness.

Third, a number of organizations, including the American Red Cross (2013), the Federal Emergency Management Agency (2012), and the National Voluntary Organizations Active in Disasters (2012), have produced materials to assist parents, teachers, and mental health professionals in their communications with children during the postimpact disaster phase. These materials generally emphasize the importance of encouraging children to express their feelings, fears, worries, and security concerns in developmentally appropriate ways without dwelling on them. Parents, for example, are encouraged to listen to their children and make it possible for them to express feelings through discussions, drawings, storytelling, or journal writing. Emphasis is also placed on restoring children's normal roles and routines. Despite the pragmatic utility of these materials, systematic evaluation is needed here as well.

### *Randomized Controlled Trials*

There has been progress on fielding RCTs of interventions that have been conducted to address children's mental health needs in the aftermath of natural disasters. Although several of these studies were included in Rolfes and Idsoe (2011) and Forman-Hoffman et al. (2013), none were individually discussed in those reviews.

The first and one of the largest RCTs in the aftermath of a natural disaster was conducted by Chemtob, Nakashima, and Hamada (2002) in Hawaii following Hurricane Iniki, which struck the island of Kauai on September 11, 1992. After screening 4258 children in Grades 2 to 6 (around 7 to 12 years old) by self-reports, 248 children were identified as having high levels of trauma-related symptoms 2 years after the disaster. Children were randomly assigned to one of three consecutively treated cohorts (with subsequent cohorts serving as waitlist controls) and within each cohort, to individual or group treatment. Both treatments were manualized and consisted of four weekly sessions on restoring a sense of safety; grieving losses and renewing attachments; adaptively expressing disaster-related anger; and achieving closure about the disaster to move forward. Compared to waitlist control participants, children in the treatment groups reported significant reductions in trauma-related symptoms, which were maintained at

1-year follow-up. The group and individual treatment approaches did not significantly differ.

Despite the absence of a long-term comparison sample and reliance on child self-reports, Chemtob et al. (2002)'s study has high historical significance as the first to screen and intervene with a relatively large population of children two-years postdisaster. They also demonstrated the feasibility and efficacy of a brief school-based, manualized psychological intervention.

After the tsunami of 2004 struck Sri Lanka and resulted in 35,000 deaths, Berger and Gelkopf (2009) conducted a quasi-randomized control trial to evaluate the effects of a school-based intervention. The study included 166 students, Ages 9 to 15, who reported significant levels of tsunami exposure in addition to past trauma exposure. The treatment group received 12 sessions of "ERASE-Stress Sri Lanka," involving experiential group activities, psychoeducation, and coping skills training, compared to a waitlist control group that received a class on religion. Students' functioning was assessed 1 week before and 3 months after the intervention on measures of PTSD and symptoms, depression, somatic problems, functional problems, and hope. Significant improvements were found on all outcome measures for the treatment versus waitlist condition. In addition, no new cases of PTSD were found in the intervention group. Notably also, thoughtfulness was given to adapting the intervention to address the unique cultural characteristics of the community, such as including the traditions by which emotions, pain, mourning, and death are processed and expressed in Sri Lanka culture (Berger & Gelkopf, 2009).

An additional RCT conducted in the aftermath of the Sri Lankan tsunami and during ongoing civil conflict implemented KIDNET (Catani et al., 2009). Thirty-one children Ages 8 to 14 years were randomized to receive KIDNET or a treatment that combined medication and elements of relaxation techniques (MED-RELAX). After six sessions of either treatment, both groups exhibited significant and comparable improvements in symptoms of trauma, a finding that persisted over 6 months. Both forms of treatment were deemed to be effective in this sample, although the authors acknowledged that the lack of control group precluded knowing whether treatment effects were due to treatment or spontaneous remission. This is a challenge in postdisaster environments, where "no intervention" may not be an acceptable option. Under such circumstances, RCTs that include wait-list controls may

be the most practical way to at least be able to differentiate treatment effects from spontaneous recovery.

Following Hurricane Katrina, Salloum and Overstreet (2008) built on past disaster intervention efforts (e.g., by Goenjian et al., 2005) by emphasizing treatment components that targeted grief in addition to PTSD and implementing an RCT just 4 months post-Katrina. Fifty-six children Ages 7 to 12 years who reported moderate to severe levels of posttraumatic stress symptoms were randomly assigned to 10 weeks of manualized individual versus group treatment. Both treatments focused on providing psychoeducation to children about grief and trauma, and assisting children to express thoughts and feelings via drawing, discussion, and writing, and reducing trauma symptoms. Meetings with parents also were held as much as it was feasible. Children were assessed before treatment, immediately following treatment, and 3 weeks posttreatment. Statistically significant improvements were found on all measures over time with no differences found between the individual and group treatments. As in the case of the KIDNET study in Sri Lanka, described above, the absence of a no-treatment control group and the short follow-up make it difficult to rule out spontaneous remission as the reason for the observed “treatment” effects for posttraumatic stress symptoms. Of note, however, the observed effect sizes at post treatment and follow-up exceeded those found by Chemtob et al. (2002). Moderate to large effects also were found for depression and traumatic grief.

In a subsequent study, Salloum and Overstreet (2012) reported the results of an intervention to examine the differential effects of coping skills versus trauma narration in producing positive outcomes among 70 African American children (6 to 12 years). Both treatment conditions included at least one parent session, with follow-up assessments at 3 and 12 months. Results indicated significant improvements in all distress related symptoms as well as social support for both treatment groups through 3 and 12 months, leading the authors to question whether processing trauma was essential for treatment: “It may be that active coping skills to address grief and trauma, without the clinician-directed trauma and loss processing, are mechanisms of change in treatment” (Salloum & Overstreet, 2012, p. 177). This is an intriguing theoretical possibility and perhaps some preliminary mediational analyses would have shed further light on it. The study also might have insufficient power to detect significant differences. Alternatively, as the authors noted, the two conditions may not have been so different

from one another as implemented. Nevertheless, this study provides an important example of moving beyond questions of outcome to questions focused on the processes by which outcomes are produced in interventions. These are critical questions for intervention research in disasters, as well as other forms of trauma, and intervention work more generally (e.g., Kazdin & Nock, 2003; La Greca, Silverman, & Lochman, 2009).

### *Disaster Preparedness*

Many of the studies and reviews described above on disaster discuss “lessons learned” for disaster preparedness. Such recommendations are discussed below. However, there is little published research on the status or the effectiveness of disaster preparedness in regard to children and their families. Existing research is predominantly focused on whether medical facilities are equipped to handle pediatric emergencies in the aftermath of disaster (e.g., Clancy & Kacica, 2012) and on training (e.g., Fox & Timm, 2008). In 2010, the National Commission on Children and Disasters painted an alarming picture of U.S. readiness to meet children’s needs, which has spurred subsequent efforts to improve pediatric preparedness.

## CONCLUSIONS AND FUTURE DIRECTIONS

Disasters and war continue to affect millions of children worldwide as we write this chapter, and there is every reason to believe that extreme adversities will confront untold millions in the future. What have we learned from the science on children in war, terror, and disaster? What do we need to know to improve strategies that reduce risk and promote resilience in terrible circumstances? In this closing section, we summarize the state of the evidence, its translational applications, and implications for future research. We conclude by discussing the potential role of developmentally informed science in the global task of understanding and addressing the consequences of these massive-scale catastrophes for child development.

### *State of the Evidence*

The aim of this chapter was to review the science on children in extreme circumstances related to war and disaster, focusing primarily on studies conducted since the turn of the present century. On the whole, the empirical knowledge



base has advanced in important and informative ways. At the same time, there are notable shortcomings in the evidence to date.

Conclusions drawn from the five decades of research on children in war and disaster during the 20th century, beginning during World War II, have held up well in the studies published during the 21st century. The most salient general conclusions from this literature are as follows:

- Higher exposure doses, both physical and psychological, pose greater risks to child well-being.
- Cumulative risk exposure, including adversities before and after acute war- or disaster-related events, increases risks for maladaptive child function and development.
- Older children typically experience greater exposure due to their awareness and age-related activities.
- Older girls generally report more internal distress while older boys display greater aggressive or disruptive behavior.
- Loss of caregiving due to separation, dysfunction, or death of parents poses particular risks for children.
- The quality of the recovery context at the family and community level influences how well children recover.
- Restoration of routines in family, school, and community are important for recovery of children.
- Given a favorable recovery context, many children fare reasonably well or recover from mass-trauma experiences.

There also have been notable developments that have advanced the science on these themes. Methodologically, there are improvements in the design of many studies, with more longitudinal data, use of multiple methods and informants, and assessments that are more culturally appropriate. Research at multiple levels of analysis, including genetic and neurobiological studies, has expanded. More nuanced studies of exposure and response are beginning to unpack the links between particular kinds of exposure and their timing, with specific parameters of response, uncovering more leads on processes by which extreme adversities affect child development and linger over time. Studies also suggest adaptive and protective processes by which parents, communities, and the children or youth themselves influence the effects of mass trauma on development.

There is growing evidence about the toxic effects of extreme adversity on child development in war and disaster, as well as developmental timing effects, that resemble the evidence from the literature on maltreatment (Cicchetti, 2010, 2013b), poverty (Evans, Miller, Chen, & Seeman,

2012), and other severe forms of adversity (Shonkoff, Boyce, & McEwen, 2009; Shonkoff et al., 2012). Children often show greater trauma symptoms when they have experienced killing, torture, and rape, whether they are victims, witnesses, or perpetrators. Traumatic stress may alter the organization and programming of stress-response systems with long-term consequences for health and vulnerability to future traumatic stress exposures (Pluess & Belsky, 2011). Generally, studies that consider timing effects have gained ground. Such work could shed light on sensitization versus inoculation effects observed in the literature. However, this research is still in its very early stages.

There is more attention to the possibility that dose effects may not always be linear. There may be exposures so high and prolonged in severity that there is a ceiling effect, beyond which point greater exposure does not continue to predict more severe symptoms (the dose-response gradient levels off). The responses of young people to political violence also may shift as conflict increases in duration or severity, with greater engagement and commitment to the cause emerging at high levels of cumulative exposures. These possibilities suggest that nonlinear models of dose-response dynamics may be important for future research.

There is new research on individual child differences in cognitive function, biology, and personality that may influence the experiences and adaptive outcomes of children or youth. Nonetheless, research on neurocognitive and biological processes remains limited, as does research on related genetic or gene-environment interaction effects. Research on the possibility that there may be differential sensitivities to experiences of mass trauma is barely underway. Similarly, there is little study as yet on the role mass-trauma exposure may have on the development of biological sensitivity to context (another developmental timing topic). Moreover, although new studies consider the role of optimism, hope, pride, and faith in the processes that influence how war or disaster engages or affects children and youth, knowledge on belief systems and self-efficacy remains very limited, as does understanding of how neurobiological processes may be linked to these differences.

The roles of child age and sex as mediators and moderators of dose and response appear to be complex. This set of findings serves as a powerful reminder that vulnerabilities and protections are continually changing with experience and development, and they are likely to interact with biological and cultural differences related to sex.

New evidence delineated throughout this chapter corroborates the central role of families and especially parents

in the experiences and responses of children to war and disaster. Yet, given the longstanding recognition about the importance of caregivers in the exposures and responses of children, observed since the very beginning of work in this research domain, there is not as much focus on family roles and functions in this literature as one might expect, either in naturalistic studies or intervention research. These gaps extend from research on parents as role models to their mediating or moderating influences on the effects of traumatic stress exposures.

There are encouraging signs that investigators are considering cultural and community differences in their conceptual frameworks, research designs, and interpretations of the findings. This is perhaps most evident in the development of culturally sensitive assessment tools. Yet this remains an area of relative neglect, ripe for future research.

There is growing attention to the role of media in many forms in child and family experiences of war and disaster, along with recognition that research on media effects has fallen behind the rapid transformation in personalized media utilization among children and youth. For better and worse, young people are “growing up online” and using social media to experience, share, and respond to salient events in their lives. With widespread use of the Internet, social media, and a “24-7” news cycle, the potential for local and global “contagion” effects of mass-trauma events has changed, along with the potential for reaching out to help through online training and better-informed outreach. Yet, to date, little is known about the impact of these media changes on the risk and protective processes for children in war and disaster.

## Future Directions

Clearly, although there has been progress in this body of research, there is much to learn about the processes of exposure, response, and recovery that will inform efforts to prepare and protect children in the circumstances of war and disaster. It is not surprising that the quality and findings of studies in these challenging research contexts lags behind advances in less difficult research environments. We anticipate the next decade of work will bring powerful new tools and knowledge to this research environment, including more studies on neurobiology, gene-environment interactions, and developmental timing effects. We also anticipate more multicultural and multinational studies that allow for elucidation of cultural risk and protective processes, and longer-term follow-up studies of pathways and growth trajectories.

More longitudinal studies also will facilitate the examination of cumulative trauma effects, developmental cascades, intergenerational transmission, and the long-term consequences of war or disaster exposure on development. We expect greater focus on the functions of cultural and community context, as well as media. As findings accrue in the next generation of research, we expect that some of the puzzling data on age and gender effects will be clarified. And finally, we expect that even more research attention will turn to intervention studies as a strategy for illuminating risk and resilience processes for child development following war and disaster.

## State of Translational Applications

One of the most salient features of new research is the increase in intervention studies, accompanied by a broader effort to translate the growing evidence base into more effective preparedness to protect children in the wake of disaster and war. These efforts have yielded data on what works, guidelines for policy and practice, and many new questions for the future.

It continues to be challenging to field an intervention study in the midst of mass trauma or recovery. Further, although we highlighted a number of new studies of interventions in the literature, including gold-standard RCTs, we noted many limitations that characterize this body of work (e.g., small samples, overreliance on child self-report, limited follow-ups). Nevertheless, these studies indicate that systematic and controlled intervention research is feasible in the context of mass-trauma exposure, although “no treatment” controls may not be ethical or feasible. CBT procedures are included in the treatments that show the most promise, although other features of the intervention may vary. This has resulted in a lack of theoretical clarity about the specific procedures most essential for producing positive outcomes. Relatedly, although intervention research (both prevention and treatment) has the potential to serve as a platform for innovative theory testing regarding vulnerability and protective processes at multiple levels of analysis, the intervention research conducted to date has lacked this type of theory-driven orientation.

Perhaps one of the most controversial issues in this intervention literature concerns whether to intervene at all, and if so, when and with whom. Bonanno et al. (2010) have made a compelling case for caution and allowing natural recovery processes to occur before intervening. Although well intended, premature intervention or excessive intervention could undermine spontaneous adaptive processes

and even interfere with healing or recovery processes at the individual, family, or community level. Certainly, it is important to provide all needed emergency resources to meet medical, physical, and emotional needs of children and avert further trauma exposure. For example, children separated from families need to be reunited as soon as possible. However, efforts to “debrief” or provide extensive mental health services can be counterproductive and run the risk of harming rather than helping children or their families.

Concerns about “overdoing” intervention or iatrogenic treatment effects have led a number of reviewers in this literature to urge caution in emergency responses to disasters and other mass-trauma events (APA, 2010; Bonanno et al., 2010; Hobfoll et al., 2007; La Greca & Silverman, 2009; Masten & Narayan, 2012; Masten & Osofsky, 2010; NCCD, 2010). These advocates support preparedness and applying general guidelines for helping the population at large in the aftermath of disaster, followed up (as

indicated) by more targeted treatment by health professionals for children or adults who do not recover or become worse over time.

### *Guidelines for Policy and Practice*

Violent conflicts are ongoing and disasters strike frequently. As a result, there is always an imperative to prepare and respond on behalf of children. The evidence base now and at any time is imperfect, but nonetheless, the preparation and response efforts must go on. This situation has motivated efforts to develop principles and guidelines to assist emergency planners and responders in their preparations and response. In Table 18.1, we list some of the common guidelines for planning and responding with the goal of helping children weather the vicissitudes of war and disaster, delineated by a host of scholars based on the evidence. For each of these 10 common guidelines, we cite sources and provide quotations reflecting the guideline category.

**TABLE 18.1 Guidelines for promoting resilience in children exposed to war and disaster, with illustrative quotations**

<b>General</b>	
Prepare for child victims <sup>1–5</sup>	“All first responders need to know what responses to disaster can be expected at all levels of human development” (Masten & Obradović, 2008, p. 12).
Support positive adaptation at all ages <sup>2,6</sup>	“Promote a sense of safety, calming, self- and collective efficacy, connectedness, and hope” (Hobfoll et al., 2007, pp. 285–286).
Recognize that parents, childcare providers, and teachers are first responders <sup>4,5,7</sup>	“Frontline responders include police, firefighters, medical personnel, emergency service providers, teachers, and daycare providers” (Pine et al., 2005, p. 7).
Reunite children with parents and caregivers <sup>1,4,5,7</sup>	“Mobilization and mediation efforts are needed to facilitate the process of reintegrating separated children” (Ager et al., 2010, p. 1275).
Restore daily routines and reconnect children to peers and teachers <sup>1,2,4,8</sup>	“Our ‘best practices’ suggestions [acute postdisaster phase] would be for caring adults (parents, teachers and health professionals) to reassure children . . . and to help them resume normal roles and routines” (La Greca & Silverman, 2009, p. 5).
<b>School-Focused</b>	
Train school personnel as first responders <sup>3–5,9</sup>	“ . . . teacher-based resilience-focused intervention is a universal, cost-effective approach to enhance the preparedness of communities of children to mass trauma and to prevent the development of PTSD after exposure” (Wolmer et al., 2011, p. 340).
Provide students with access to mental health services <sup>4,10</sup>	“Additional services should include just-in-time training on bereavement support, psychological first aid, brief supportive services, and guidelines for referral for mental health services” (NCCD, 2010, p. 99).
<b>Community and Cultural</b>	
Restore cultural and religious practices <sup>4,11–14</sup>	“ . . . recommend the enhancement of community self-help and social support, helping the provision of appropriate cultural, spiritual, and religious healing practices, and support, particularly for young children (0–8 years) and their careers” (Reed et al., 2012, p. 262).
Build community resilience across multiple ecological systems <sup>4,5,14</sup>	“Communities must develop economic resources, reduce risk and resource inequities, attend . . . to areas of greatest social vulnerability . . . engage local people, create organizational linkages and relationships in advance of disasters, and boost and protect naturally occurring social supports” (Norris et al., 2008, p. 145).
Tailor prevention and intervention efforts to cultural context rather than “one-size-fits-all” <sup>1,15</sup>	“It is essential to not ignore or undermine existing or traditional mechanisms” (Ager et al., 2010, p. 1275).

*Note.* Guidelines are derived from recommendations in the following sources: <sup>1</sup>Ager et al. (2010); <sup>2</sup>La Greca and Silverman (2009), <sup>3</sup>Masten and Obradović (2008); <sup>4</sup>Masten and Osofsky (2010); <sup>5</sup>Pine et al. (2005); <sup>6</sup>Hobfoll et al. (2007); <sup>7</sup>Masten and Narayan (2012); <sup>8</sup>Betancourt, Borisova, et al. (2013); <sup>9</sup>Wolmer et al. (2011); <sup>10</sup>National Commission on Children in Disasters (NCCD, 2010); <sup>11</sup>Fazel et al. (2012); <sup>12</sup>International Agency Standing Committee (2007); <sup>13</sup>Reed et al. (2012); <sup>14</sup>Norris et al. (2008); <sup>15</sup>Tol et al., 2013.

### Future Directions

As other reviews have noted, there is a striking lack of research on intervention, best practices, preparedness, and related policies given the global scope of children exposed to war, terror, political violence, and disasters. There is a vast gap between international need for evidence on “what works” in situations of great threat to child well-being in war and disaster, and the current state of the research. This situation calls for a large-scale mobilization of stakeholders to support and promote more high quality, practical research on prevention, preparation, and treatment of children in war and disaster.

### A Call to Action for Developmental Scientists

Developmental scientists have much to offer the global effort to understand and address the issues of children in potential danger from mass-trauma situations (Masten, 2014). Ager et al. (2010) delineated this theme in their article in a special section on children in war and disaster in *Child Development*. They described a translational gap between the international humanitarian agencies and developmental sciences that may be due in part to the limitations in developmental science with respect to research in diverse cultural settings, particularly in low-income regions of the world. Another factor may be a communication divide. These authors urged developmental scientists to engage more fully with practitioners to conduct research in diverse cultural settings and also to provide clearer guidance based on their evidence for humanitarians involved in international relief and disaster response. A forum for this dialogue would facilitate the efforts of those who want to span this divide.

There are additional signs that a window is opening for developmental science to inform and advance global efforts to reduce harm and promote resilience in relation to war and disaster. Multinational organizations, such as UNICEF, the European Union, and the World Bank, that frequently plan and respond to mass-trauma situations have sponsored conferences and publications that include developmental science and scientists. The U.S. National Commission on Children in Disaster report in 2010 cited a special section on children in war and disaster in *Child Development* (Masten & Osofsky, 2010). Developmental science organizations and funders are expanding their support of research in low- and middle-income regions of the world more generally and disaster or war zones more specifically, through grants, meetings, membership, and publications in their journals. The 2013 Ernst Strüngmann

Forum at the Frankfurt Institute for Advanced Studies brought multidisciplinary scientists together to discuss the potential role of developmental science for building pathways to peace (see Leckman, Panter-Brick, & Salah, 2014).

Developmental science will be informed and enhanced by expanding the capacity for research on children in war and disaster worldwide, and by opening more opportunities for ongoing dialogue and collaboration of developmental scientists with experts in the field who are charged with preparing and helping large populations to respond effectively on behalf of children. Experiences of war and disaster test the limits of human capacity for change and recovery, and they may reveal entirely new processes of adaptation, risk, and resilience that enrich and challenge developmental theory. Prevention and intervention research designed to test best practices for preparation and recovery have the potential to test theories about vulnerability and protective processes, differential sensitivity, and effects of developmental timing or culture for positive change at multiple levels of analysis. Analysis of similarities and differences across distinct cultural contexts that compare effects or interventions in war or disaster with other forms of extreme adversity also may be illuminating. After seven decades of study, research on children in war and disaster continues to be a frontier for developmental science.

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## CHAPTER 19

# Children and Cultural Context

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Studies and analyses of children and cultural contexts have changed a great deal over a relatively short time. Over the past decade, for instance, there has been a marked increase in number and in content: in the variety of questions raised and proposals offered. Those changes have prompted several large-scale accounts (e.g., Bornstein, 2010; Cole, 2010; Rogoff, 2003; Shweder et al., 2006). They have enriched and revitalized analyses and studies in the area. They have also brought with them the danger of making analyses and studies in the area to appear like unrelated “bottles washed up on the beach” (Bornstein & Lansford, 2012, p. 26). To avoid that danger and to bring out structures and patterns within the variety of approaches, we take two steps. One consists of focusing on changes in content, with changes in

number largely set aside. The other consists of asking two central questions: What has changed? What follows?

### OVERVIEW

The chapter is in five sections. The first is an account of what the chapter covers. The second focuses on changes in conceptual frames: their separations and connections. Proposed is a shift toward considering the development of children in relation to *cultural contexts* as a way of avoiding splits and dichotomies. The third section focuses on changes, for five lines of analysis, in specific conceptual frames and topics, and in research approaches as they have progressed and might progress. The fourth section cuts across the previous two. It turns to implications for research directions that move from an emphasis on separations to emphases on connections. It also moves beyond positions that are essentially “one-way” in their emphasis: are unidimensional, unidirectional, or neglect questions

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We gratefully acknowledge the continuing support of our universities and departments and the many colleagues who have contributed to our understanding and experience of development.

With deep sadness we note the passing of Jacqueline Goodnow prior to the publication of this chapter.

about changes over time. The summary then reviews what the chapter has covered and what has emerged for us as some specific proposals for future directions in conceptual frames and in research questions.

The approach throughout is directional rather than encyclopedic. The emphasis falls on starting points, shifts, and further directions. The work we cover and the citations we make are then necessarily selective. We have given preference to analyses and studies that bring out starting points or changes in direction, or to articles that offer reviews of these. The approach also draws from more than one discipline, primarily anthropology and psychology. Proposals often differ from one discipline to another. Those differences, however, make contributions from more than one all the more interesting and useful.

The focus on content does not mean that we regard changes in number as unimportant. They simply tell a different story. We note them only in relation to some parallels in the bases suggested for both number and content. One of these consists of changes in voice: in the power of political voice and in demands for change in what is covered. This is one of the bases suggested by García Coll and her colleagues for increased attention to development in ethnic/cultural groups within the United States (e.g., García Coll & Marks, 2012). The second base has to do with changes in the extent and immediacy of encounters with cultural contexts other than one's own. Those changes may stem from travel, immigration, displacement, or refugee status, or from the increased flow of information that comes from media changes. Attention to "remote acculturation" is one example of that suggested base (e.g., Ferguson & Bornstein, 2012; Thompson, 2012). Both bases underline the importance of external conditions. We see these as always important. For changes in content, however, we emphasize conceptual frames or research approaches that may help or hinder the exploration of unfinished work or new questions.

We divide changes in content into two kinds. One focuses on changes in conceptual models, the other on changes in both models and specific research topics or approaches. That separation may at first seem strange. Frames and research approaches are always interrelated. In the first kind of change, however, conceptual frames are expected to apply to a variety of areas. There is then no need to add attention to specific topics or procedures. In the second kind, changes in frames are anchored in and accompanied by specific topics and studies. For both kinds of change, we single out some particular forms, offering first a description of the nature of the shift and

then questions or proposals that follow or might follow. Analyses of frames are predominantly concerned with separations and connections of several kinds. We start with what is covered by the terms *culture* or *cultural*. Prompted then are moves toward clarifying what these terms mean and setting up criteria that should be met before their use. As particular sources, we turn to proposals from Cole (2010), D'Andrade and Strauss (1992), and Gjerde (2004).

Considered next are moves that seem to start from interests in order or structure but do so in ways that turn out to be limiting and restrictive. The first of these takes the form of conceptual splits, dichotomies, and fundamentalist steps. Here, for example, are splits between persons and contexts or between cognitive and social development, often made so separate that they are seldom seen as intertwined or as co-occurring. Here also are fundamentalist steps in the form of regarding one side of the divide as more "real" or "fundamental" than the other, then dismissing the other side with the assumption that the one regarded as the "real" can account for everything. As a particular base, we take analyses offered by Overton (e.g., Overton, 2010; Overton & Lerner, 2012).

The remaining changes related to separations and connections have to do with differences in the power and the direction of influence. In the first of these, the initial frame has been one of assigning a low degree of power to cultural contexts. They have often been placed at the remote ends or the outer edges of a collection of influences. Children's experiences and awareness of cultural contexts have also been seen as occurring late in their lives. The shift has been toward regarding cultural contexts as central and as part of children's lives at an early age (e.g., Diesendruck & Markson, 2011; Goodnow, 2011; Hedegaard, 2009). In the last change in frame, the shift takes the form of an expansion. Often, the directional flow of influence was seen as coming from cultural contexts to children. The shift has been toward considering the flow of influence as taking two directions, with children themselves seen as active rather than as passive, as influencing the nature of their development and of their contexts. Analyses by Kuczynski and his colleagues provide a particular base (e.g., Kuczynski & De Mol, Chapter 9, this *Handbook*, Volume 1).

The second kind of change combines conceptual models and, for research, specific content areas and procedures. Line 1, the first of five lines of analysis, focuses on shifts from an emphasis on universals—that makes cultural contexts largely irrelevant—to an emphasis on specific situations and circumstances. Emphasized, for instance,

is the occurrence of particular needs or expectations and of the experiences or resources that help people meet these needs and expectations. The research emphasis then falls on analyzing the nature of expectations and experiences, the choice of groups to compare and of measures to use, and the interpretation of similarities and differences. As a specific base, we take a study by Callaghan et al. (2011).

Line 2 focuses on change in the form of emphasizing the need for units of analysis that can be brought to bear on a variety of contexts or age groups. Without these, it is difficult to compare contexts or ages with one another, to ask how they are related, or to analyze effectively the nature of transitions from one context to another. The units proposed draw on the features of place or site, of activities and participation in them, and of people and their relationships (e.g., relationships as experts or novices, or as collaborators on joint activities). The research emphasis then falls on analyzing the nature of these features (e.g., the nature of participation in joint activities and of the ways in which people act together). We take as a base, proposals from Barker and Wright (1955), Cole (2010), Rogoff (2003), and Stone, Underwood, and Hotchkiss (2012): proposals drawn from both ecological and cultural-historical perspectives.

Line 3 focuses on shifts in the qualities seen as markers of cultural contexts, again seen as primarily in terms of one marker, with its opposite excluded. One shift is from regarding continuity over generations as the primary marker to an emphasis on change, both across and within generations. The other is a shift away from regarding cultural contexts as marked or defined by uniformity or homogeneity. Ideologies of interdependence or independence, for example, were often seen as applying to all people living in a particular context. Instead, cultural contexts are now seen as marked by diversity in ways of thinking or acting, often in competition with one another. The research emphasis then falls on exploring the conditions that favor the emergence of continuity or change, of uniformity or diversity. It falls also on the strategies people use to promote the occurrence of one rather than the other. For specific research bases related to continuity, we take work prompted by Patterson's (2010) questions about "the puzzle of persistence" (p. 139). For diversity, we focus on studies of strategies, for example, on a study by Padilla-Walker and Thompson (2005) about the strategies parents use to avoid children's serious departures from the ways of thinking or acting that parents value.

Line 4 picks up issues of continuity and change, of uniformity and diversity, and of transitions, specifically

relating these experiences to concepts and studies of acculturation. The shift is away from seeing acculturation-related changes as belonging only to immigrant and minority groups, seeing these changes as relevant to all people within multicultural societies and to all people, especially young people who are in touch with global media and changing societies. Research on development then naturally focuses on changes in young people's relations to their heritage cultures, their construction of bicultural identities, and their relationships with parents who are committed to the heritage culture.

Line 5 takes up moves away from separating "pure" from "applied" psychology, "theory" from "action." These are never separate. As a way of bringing out their links, we take up analyses of policies that affect children's lives. Those analyses may focus on variations in policies among cultural groups. We emphasize instead the need to consider not only the policies that are the end products of work but also the process of policy-making, regarding it as a joint activity that involves several players. As examples of this shift and of possible variations among cultural contexts, we turn to analyses by Beckert (2008), Shonkoff and Bales (2011), and Tisdall (2008). On the basis of those lines of analysis, in the final sections, we draw out implications and directions, and recurring messages about contexts and development that have emerged from considering the two kinds of change.

## CONCEPTUAL FRAMES: SEPARATIONS AND CONNECTIONS

We start with reexaminations of the terms *culture* and *cultural*, noting their nature, their significance for analyses of contexts and development, and shifts toward more productive positions. As we noted earlier, that concern with conceptual models is followed by concerns with conceptual splits, and by second looks at divisions related to the strength and the directional flow of influence.

### The Meanings of *Culture* and *Cultural*

Ways of defining culture have a long and varied history. The most accepted view, however, is that defining it only in terms of nationality will not be enough. It may even be misleading. Looking only at definitions of what culture is, however, may be even less rewarding. The last thing one needs, in Cole's (2010) analysis, is "to get bogged down

in disputations about ‘the one right meaning’ of the term” (p. 462). That can easily happen. Kroeber and Kluckhohn (1952), for instance, listed 160 definitions of culture. To that list, Jahoda (2012) noted, they added one more: their own.

What alternatives then might be used? One alternative is to discard the term altogether. As Cole (2010) noted, “many anthropologists have decided to chuck the concept of culture as a distraction” (p. 462). That alternative, however, Jahoda (2012) has seen as out of step with the fact that the term is already part of everyday language. His advice was to take one of two steps: either set up a single definition and stay with it, or stay closer to everyday use. People have little difficulty, for example, with being asked: What is your cultural background? They may answer in hyphenated terms: Swiss-German, Italian-American, Malaysian-Chinese. They may also answer in terms that are meaningful only to a smaller group of people (e.g., Assyrian or Transylvanian). Overall, however, people have little or no difficulty with questions about their cultural background.

A second alternative is to turn completely or in large part to the use of the adjective *cultural* rather than the noun *culture*. That alternative is in wide use, for instance, in references to cultural practices and cultural models. The adjective avoids any reification: any view treating culture as a “thing” that may vary only in whether there is more or less of it. Use of the adjective *cultural*, however, is still seen as best restricted to ways of thinking or acting that meet certain criteria. D’Andrade and Strauss (1992), for example, have offered analyses of both *cultural models* (ways of thinking) and of *cultural practices* (ways of acting). They reserve the term, however, for ways of thinking or acting that are shared by all or most people in a group, have the same meanings for them, have been maintained over one or more generations, and have some quality of commitment. People may, for example, share views of how light bulbs work. Those views, however, are held without commitment and are easily changed. Views of what marriage means are less easily changed.

Cole (2010) has provided a further part of the picture. He has used both terms (*culture* and *cultural*) but again with some particular qualifications. In his approach, the adjective *cultural* applies to ways of thinking or acting that are widely shared, have been generated in the past, and are made available to people who come to the same task or the same setting at a later time. *Cultural* then can be a way of describing not only practices and schemas but also what Cole described as tool kits: resources or artifacts that range from spades and cooking utensils to written languages and

other forms of available knowledge. *Cultural* is also a term that in Cole’s (2010) view:

applies equally to small groups of people who have engaged for some time in joint activities to achieve some common object, such as working in the same business or same office, or the same Little League team or army unit or in the same classroom. (Cole, 2010, p. 462)

That proposal certainly shakes up the meanings of the terms *culture* and *cultural* in both everyday and social scientific usage. It conveys, however, less of the sense of self and other that Gjerde (2004) regarded as a definitive feature of cultural ways of thinking or acting. Once those ways of thinking and acting are recognized, it becomes harder to weaken the significance of the cultural. They may also become more salient under particular circumstances. The sense of being Japanese and distinctive in ways of thinking or acting, to take one of Gjerde’s (2004) examples, became more pronounced during the time of American occupation. In related fashion, descriptions of oneself as from “the North” or “the South” seem to reflect, within the United States, the strength of memories of what is still often referred to there as “the war between the States.”

### *Significance and Some Further Questions*

Discussions about definitions may seem to be only of academic interest. They have, however, the positive value of indicating changed approaches to questions about the nature of contexts, of development, and their interconnections. Instead of encountering *culture*, for example, children can now be seen as encountering a world in which some ways of thinking or acting are widely shared, and held with feeling. They are then likely to receive the same message from a variety of sources, making it more likely for them to see that message as normal, natural, or right, and to be accepted without questioning. All told, children can be regarded as encountering a mix of approaches to ways of thinking, acting, and feeling. Some of these are actively encouraged: for example, use the “magic word: the word please” (Becker & Goodnow, 1992). Some are actively discouraged: for example, “never eat food with your left hand.” (Views about what is “clean” and what is “dirty” seem to vary from one cultural context to another, but the distinction appears to be made in all, and to be made with feeling). Some are left more open to negotiation, compromise, deferral, or choice: for example, “that’s possible,” “you’ll learn more about that when you’re older,” “that’s up to you.” or “which one would you like?” Development can then be regarded in terms of people—children



or adults—accepting some ways of thinking, acting, or feeling without question. It can also be seen as a process of testing the limits or rejecting what others have proposed (e.g., Kuczynski & De Mol, Chapter 9, this *Handbook*, Volume 1; Valsiner & Lawrence, 1997).

Still to be taken further are questions about the everyday use of *culture*. Its use, Jahoda (2012) pointed out, is widespread. Still unclear, however, are the meanings carried by the term, and the conditions that influence the terms used for describing one's own or other groups. The use of hyphenated terms such as German-American, or Swiss-German, for instance, is likely to vary from one social situation to another. It may also vary with age. The choice of hyphenated terms to describe oneself, for instance, may be more likely to occur at ages when young people review their identity and the names associated with it: mostly in adolescence or young adulthood (e.g., Côté, 2006; Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993). Even then, however, some groups may reject hyphenated or other terms that make sense to other people. The second-generation Turkish young people in the Netherlands interviewed by Verkuyten (2004), for example, described themselves as Turkish: but not Turkish like those in Turkey, not like the segregated, traditional Turks in the Netherlands, not like their Turkish immigrant parents, not like other immigrant groups, and not like the Dutch.

Is this reexamination of terms and views among psychologists and anthropologists all that is needed? Within social science, one unfinished task has to do with taking up recommendations of the kind just mentioned. We would like to see both terms—*culture* and *cultural*—retained but used with care. For this chapter, however, we have tried using only the adjective *cultural*, and using it only to refer to ways of thinking or acting or to situations that are marked by the several criteria suggested by Cole (2013), D'Andrade and Strauss (1992), and Gjerde (2004). Still left, however, is the challenge offered by Cole (2013) about *cultural* as a term to use when we refer to groups that have met a common or shared task in ways and with meanings that have lasted over time, and that carry with them implications of identity (e.g., "I—or you—are one of the regiment, team, or working group"). We have yet to find widely accepted terms for these contexts, with some social scientists turning, for instance, to terms such as *subcultures*, *mini-cultures*, or *communities*: terms with further sets of meanings to decipher. The term *cultural context* covers the sense of ways of thinking, feeling, and acting that are shared and lasting, the sense in which people

can be said to belong to distinctive cultural groups, and the sense that there is more than one way of thinking, feeling and acting in any situation. Development, then, needs to be considered and analyzed as it is intertwined with cultural contexts.

### Splits, Dichotomies, and Fundamentalist Steps

Analyses of contexts and development, it has been pointed out, are often marked by conceptual splits. Overton (2010) offers a particularly relevant list. It includes, for example, separations between person and context, stability and change, unity and diversity, reason and emotion. The presence of such splits has often been noted. They come up in several disciplines and in analyses of a variety of content areas. Overton (2010) has added three further steps. One consists of regarding what has been placed on the two sides of the divide as completely distinct and as never coinciding (as "dichotomies"). In the second, one of the separated parts comes to be regarded as more "fundamental" than others. To take one example, "the natural (material physical, objective) constitutes the ultimate foundational real, the ultimate 'atoms' on which all else is built" (Overton, 2010, p.12). In the third, "one of the pieces of the whole is more real than the other and . . . therefore the less real must be explained (i.e., reduced) to the more real" (p.12).

Objections to these several steps are not new. From them, we single out objections to the fundamentalist steps that assign all or most power to what is on one side of the divide. One specific objection is that assigning the main role to social processes reduces the significance of internal mental processes and ignores the duality (Valsiner, 2000). A further objection is to positions that regard the genetic or the neural as fundamental, again reducing the significance of all other sources of influence on development or ignoring them: a widespread and often repeated objection (e.g., Gottlieb, 2007; Lerner, 2011; Lerner & Overton, 2008; Overton & Lerner, 2012).

In the face of these many objections, why have splits, dichotomies, and fundamentalist steps persisted? One base is certainly the simplification of conceptual or empirical tasks. Exploring interactions or interconnections can now be avoided. A second base, more specific to analyses and studies of cultural contexts, is the lack of clear alternatives. Other areas, for instance, have seen the development of "systems perspectives": perspectives in which all the components of contexts and development are regarded as parts of a dynamic system, constantly interacting with one

another. Change in one then involves changes in others. In addition, each component (a family, for instance) is regarded in itself as a dynamic system rather than as a fixed or single block, interacting only with other blocks (e.g., Lerner, Lerner, Almerigi, & Theokas, 2006).

Systems perspectives, however, are not yet a consistent part of analyses of cultural contexts. Some proposals certainly come close to including them. Acculturation changes for one person, for instance, have been recognized as having significant flow-on effects for other family members. A child's competence in a new cultural context may also bring extra family responsibilities. Immigrant young people who become competent in dealing with the mainstream culture, for instance, may become bridges for their parents' interactions with personnel from various institutions: teachers, doctors, shopkeepers (Padilla, 2006).

Emerging also as possible bases for the persistence of splits are views about "other people" in the tasks faced by social scientists and in everyday experience and everyday language. Studying other people may seem an esoteric activity, a diversion from what is seen as the important task of understanding one's own cultural group. To counter this view, it has been said that one of the greatest benefits from analyzing contexts and development in "other places" is the increased awareness of what is taken for granted in one's own views of children and of appropriate approaches to research. With new awareness, for example, we soon begin to take second looks at our concepts of intelligence, our sense of the need to know children's chronological age before making any comparative study or any developmental assessment, and our understanding of how it feels to be a "stranger," a "foreigner," or an "alien" (e.g., Shweder et al., 2006).

For the last potential basis, we have been prompted by Overton and Lerner's (2012) description of splits and fundamentalist steps as a "divide and conquer" strategy. That strategy is one often observed or advocated in many parts of life. Perhaps the approaches of many social scientists to contexts and development are in large part an extension of that experience. Divisions are certainly more prominent than interconnections or duality. Here are day and night. This is "what boys do," this is "what girls do," and mixing these is often seen as best avoided or as requiring some extra justifications: justifications, for instance, on the basis of equity, fairness, tolerance, or creativity. In related fashion, a divide and conquer strategy is thought of as fundamental or routine in many content areas. It may then be simply extended, without thought, to conceptual analyses of contexts and development.

### Levels of Influence: Low for Cultural Contexts?

Cultural contexts are often regarded as on the remote mountaintop or the outer edges of children's experience. They are to be turned to only when influences from more proximal sources have been found to be insufficient. Even then their influence may be seen as indirect. They affect child development, for example, by influencing the behavior of parents, or they trickle down to more proximal contexts. In contrast is the recognition of the relevance of cultural contexts to all analyses of development in context and to the understanding of development in general. Contributing to this position are reservations about nested or tiered arrangements.

Any nested picture of contexts attracts the perception of cultural contexts as on the far outer edge of other contexts and as having only indirect impact on children and their development. Bronfenbrenner's (1979) ecological model provides an example. There is no doubt about the value of its contribution to the recognition of contexts as more than simply proximal. The text also draws less sharp lines between contexts that succeed one another than often-cited graphic pictures of circles that surround one another. Reservations to both, however, have taken several forms, all related to some underlying concepts of children and their development. In one reservation, concern is expressed that children are seen as passive and acted upon (Goodnow, 2010; Hedegaard, 2009; Lawrence, 2008). In another, children are seen as acquiring knowledge of a remote world only through parents or other adults playing filtering or gate-keeping roles (Goodnow, 2011). A third has to do with the implication that young children will have little awareness of the world outside the family. At least in many ethnic minority groups, however, children have an early and sharp awareness of outside conditions and of what may or may not be open to them (Raffaelli, Carlo, Carranza, & Gonzalez-Kruger, 2005). In a fourth reservation, the concern is that the temporal sequence implied by the model is not in keeping with what happens in many cultural contexts. In Bronfenbrenner's (1979) model, for instance, children appear as making a late entry into contexts outside the family, doing so only when they cease to be young children or after some years in school contexts. That may be the case in the Western world. (We recognize that the term "Western" is a social construction but, for ease of reading, we omit the quotation marks here and throughout the chapter.) In many cultural contexts, however, children are expected to enter paid work and contribute to the family income at an age when children in

Western contexts are in preschool (e.g., Dachyshyn, 2007; Nsamenang, 2011; Weisner, 2002).

Are there then alternatives to separated and nested contexts? One alternative is certainly an emphasis on the immediacy of a variety of children's experiences. Diesendruck and Markson (2011), for example, see children from the start of their lives as "surrounded by norms, practices, and symbols that are mostly arbitrary and often unique to a particular community of people" (p. 189). In order to know what others expect, and how to signal what they themselves wish to have happen, they need from the start to work actively at decoding those norms, practices, and symbols. Occurring also may be not so much encounters with new ways of thinking, acting, or feeling as encounters with a reworking of some core pervasive themes. Children may always be seen as entitled to some support from adults. The supports they think they need and that others are prepared to supply, however, will vary from one context to another. Those variations present children, as they move from one context to another, with the need to think again about the nature of supports. That task in itself, however, is not completely new (e.g., Goodnow, 2010).

### **Directionality: From Contexts to Children and the Reverse**

Influences on child development have at times been seen as one-directional, with contexts given the primary role. In those approaches, the emphasis then usually falls on how others shape child development. Kuczynski and De Mol (Chapter 9, this *Handbook*, Volume 1) provide an historical review of these accounts, describing the middle of the 20th century as a "unidirectional era." The shift has been toward the recognition, especially in parent-child relationships, that influences are always bidirectional. That shift has also become a part of analyses of person-context interactions. Contexts are now seen as not only reproductive, with development taking only the form of children coming to reflect adults' ways of thinking or acting. Instead, children are increasingly recognized as affecting the nature of contexts, possibly transforming them (e.g., Shweder et al., 2006).

These conceptual frames take us part of the way toward bringing out the pattern of analyses in the area of cultural contexts and development, highlighting shifts that have occurred, the directions they have taken, and the directions that might now be considered or taken further. To them, however, we need to add an account of research studies.

These are a necessary part of the picture: often the point where interest in the area or in conceptual frames begins. They are also a check on conceptual frames, asking where they fit well and where they need some amendments or expansions.

## **LINES OF ANALYSIS**

Each of these five lines of analysis, as we mentioned earlier, involves a shift in concepts and often, in research approaches. To each line we bring a common directional frame, focusing on starting points and shifts. Each line ends with suggested further directions. From all, we have excluded debates about whether cross-cultural comparisons or within-group analyses are the optimal or the only methods. The use of either or both depends on the questions being asked.

### **Line 1: From Universals to Situational Bases of Similarity and Difference**

Questions about possible universals have been asked in relation to many aspects of development. These range from psychomotor development, mirror self-recognition, language development, stages in cognitive development, progressions in moral reasoning, and distinctions among relationships. At issue in all these areas is more than the demonstration of similarities and differences. At issue are questions about the developmental changes we regard as significant, how we can effectively compare contexts, measure similarities and differences, and legitimately draw out inferences from what we observe.

As a focus, we take analyses of psychomotor development. For many developmental psychologists, this was where interest in universals began. Analyses in this area also have a long history of challenges, changes, and new proposals, with many of these relevant to several areas of development. Our starting point is Gesell's analysis of early motor development (e.g., Gesell, 1928). It covered changes in behaviors such as sitting, standing and stair climbing, accompanied by proposals that these developmental sequences were invariant and showed little impact from efforts at direct instruction. When these progressions were incorporated into Bayley's (1969) widely used scales for infant and toddler motor development, they often came to be regarded as normative, with delays seen as indicative of difficulties in development that called for corrective measures (Adolph, Karasik, & Tamis-LeMonda, 2010).

Proposals about sequences and timing—age of onset especially—were soon followed by reports of cultural variations. These were variations in the form of “African precocity” and in the form of delayed timing (e.g., later ages of onset when infants were carried, swaddled, or strapped to a papoose board rather than being allowed or encouraged to crawl or toddle). Overall, a picture emerged of departures from the Gesell/Bayley norms and recognition of influences from a variety of circumstances: “climate, housing, terrain, man-made artifacts, parents’ expectations and naive theories, and particular childrearing practices” (Adolph et al., 2010, p. 65). Both universals and variations exclusively based on genetic differences ceased to be adequate accounts. So did any view of nurture as restricted to direct instruction.

Those shifts might seem to have been the end of interest in variations in early motor development. One contrary example is Varga’s analysis (2011) of the extent to which Gesell’s (1928) research approach shifted attention from observing children in the course of their daily lives to observing them in unfamiliar situations and in isolation from the people who usually share space with them. Varga also criticized Gesell’s view that the age norms he observed would apply to all groups, seeing that as an early example of the essentially ethnocentric or colonial quality of many Western views of development.

As a further example of continued interest, we take a study by Callaghan et al. (2011). We single it out for four reasons. It is relatively recent. Its emphasis is firmly on what cultural contexts demand and provide: circumstances that clearly might change from one situation or context to another. It displays an awareness of pitfalls and how they might be avoided. It also makes some particular contributions to questions about concepts, methods, and interpretations: contributions relevant to the analysis of other aspects of development and other contexts.

Callaghan et al. (2011) compared three groups of children Ages 1 to 3. Two groups came from traditional village settings in Peru and India, the third from a middle-class setting in rural Canada. The measures chosen were of actions labeled *social cognition*. They involved “understanding the intentions and attention of others: imitation, helping, gaze following, and communicative pointing,” together with “participating in interactive episodes of collaboration and joint attention” (p. vii). In effect, the shift was away from emphasizing actions that may be carried out in solo fashion to actions that call for the coordination of one person’s actions with those of another.

Differences in the age of onset (later onset for children from traditional villages) appeared only for skill in pretend play that called for object substitutions (e.g., treating a stick as a horse) and in the production of pictorial representations of objects or people. Parents in traditional groups may see these skills as having little or no functional value or as relevant only in relation to preparation for school. The children in all three groups, however, did develop these skills. The general interpretation of these differences is in terms of children developing “the skills they need at the times they need them” (Callaghan et al., 2011, p. 11): a proposal similar to Tomasello’s (2003) usage-based rather than nativist approach to the development of language. In effect, neither inborn readiness nor direct instruction was seen as an adequate description of how developmental changes come about.

### Questions and Directions

The study by Callaghan et al. (2011) is an example of an approach that offers both some conceptual changes and some changes in research decisions in relation to questions about the intertwining of cultural contexts and development. Conceptually, this approach emphasizes that there is more than one possible interpretation of similar ways of thinking and acting across cultural groups. One interpretation is in terms of nativist givens. Another is in terms of the kinds of experiences that various contexts provide. Similarities across cultural contexts, for instance, may arise either because these skills depend very little on environmental input, or because each environment offers sufficient experience to support similar aspects of development. A related conceptual proposal is that a particular aspect of development need not be tied to a specific experience. Several experiences may serve the same function. The basis may also lie in flow-on, cascading effects from other developmental changes (e.g., Cox, Mills-Koonce, Propper, & Gariépy, 2010; Masten & Cicchetti, 2010).

An account of development based on normative expectations, however, may seem to suggest that children play an almost dormant role, awakened by input from contexts. It may suggest also that developmental changes follow only the directions that contexts promote. Both limitations are out of line with conceptual frames that give children a more active role. The challenge lies in specifying the forms this active role may take. A study by Rakoczy, Warneken, and Tomasello (2008) provides one specification. Young children were asked to watch a puppet solve a puzzle in



order to reach a reward. The puppet made several unnecessary moves. The children, however, did not repeat these moves when they were asked to solve the puzzle. They did not indiscriminately reproduce what they had observed. Instead, they brought to what they observed an interpretive and evaluative eye.

For approaches to research, we take up two aspects. One is the use of age of onset as a primary measure. The other is the choice of particular behaviors. Age of onset is only one of many aspects of age, and requires a reason for choosing it (Adolph et al., 2010). Callaghan et al. (2011) chose onset because of the conceptual proposal that skills appear as needed. Some may appear later than others because they are seen as less significant, as not yet needed or expected. The less significant are then deferred until the more significant have been met. Pretend play, for instance, may have a low priority in many cultural groups. It did appear in all the cultural groups considered in this study. In the traditional villages, however, it seems highly likely that other forms of competence were given a higher priority.

For their selection of behaviors, Callaghan et al. (2011) chose behaviors that are not solo activities. These social cognitive tasks called for understanding the actions and the intentions of others (e.g., understanding the meanings of pointing) or for tapping into the symbolic systems of others (e.g., coming to understand that riding a stick may represent riding a horse or that particular lines on paper can represent a person or a house). One reason for this choice was to avoid criticisms of “researchers who parachute their procedures from Western labs into cultures where even asking a question one knows the answer to is considered odd” (Callaghan et al., 2011, p. 112). Criticisms of that kind have a continuing history in cultural studies (e.g., Cole, Gay, Glick, & Sharp, 1971; Serpell & Jere-Folotiya, 2008). One alternative is to choose measures that reflect the local culture. Callaghan et al. (2011) instead chose some behaviors (e.g., mutual gazing, responses to pointing) that had already been observed both in many cultures and in other primates. These were not then unfamiliar or foreign behaviors for any cultural group. The researchers then contrasted them with other behaviors that were more likely to be culturally specific.

Line 1 has taken us some distance toward a clearer understanding of cultural contexts and child development, together with conceptual and research questions that we shall need to keep in mind. What then is added by a line of analysis (Line 2) that focuses on contexts considered in terms of variations in place, activities, and people?

## **Line 2: Toward Common Units of Analysis: Place, Activities, People**

Line 2 presents changes in the way research and analyses have proceeded. The most visible of these changes may be a shift toward comparisons that are not always across groups differing in cultural background: the approach seen in Line 1. These comparisons are by no means abandoned. Now added, and often seen as primary, however, are comparisons between groups usually regarded as belonging to the same cultural background but varying in generation, in different kinds of experience, in needs, or in access to resources.

We now see, for example, analyses of changes over generations in the rug patterns woven by people in the same village (Greenfield, 2004). We also see studies of changes in the way Girl Scouts sell cookies as part of their annual fundraising. The goal is still the same. So also are parts of the methods used (e.g., the personalization, the sellers, the experience). There is no change in the quality of the cookies. With email access available, however, changes occur in the nature of contact, and how preferences, orders, and payments are made and recorded (Rogoff, Baker-Sennett, Lacasa, & Goldsmith, 1995).

Studies such as these may not immediately be seen as part of research on cultural contexts and development. They are, however, a major part, especially because of the search for units of analysis that can be carried from one part of the picture to another. Common units of analysis can be used to describe several contexts, to compare them with one another, to combine them into some cumulative picture, or to specify transitions between them. Without common descriptors and common units of analysis, we are in danger of working with distinct and unrelated pieces that are difficult to bring together and, especially in relation to cultural contexts, with a limited understanding of how various ways of thinking or acting evolve.

In many respects, considering various contexts in terms of tasks and resources is one move toward a common unit of analysis. More explicitly directed toward that purpose however, have been three other lines of approach. In some proposals, the emphasized common unit has to do with place or site: its demands for various forms of competence, the resources it provides, and the activities it allows, facilitates, or makes difficult. In others, the emphasized common unit is one of activities: often with an emphasis on activities where two or more people need to participate, to coordinate what they do, and to understand each other's plans or intentions. In a third, the emphasis falls on people: their expectations, their abilities, and their willingness to

promote various developmental changes, how they do so, and their relationships to one another.

Observations and proposals about these units of analysis come from several conceptual approaches, often labeled as *ecological*, *cultural-historical*, and *practice-oriented*. With one exception, we note the main proposals from these approaches as we proceed. With one exception also, we take up the three kinds of units in turn, noting interconnections as we proceed. The exception in both cases is a particular ecological approach: one that considers all three aspects—place, activities, and people—as parts of a unit of analysis.

### ***A Particular Ecological Approach***

Ecology is a term with a considerable history in both biology and psychology. It covers a variety of approaches and a variety of terms (e.g., habitats, niches, and niche construction). From psychological approaches, we single out one described as *psychological ecology* (e.g., Barker, 1968; Barker & Wright, 1955). We do so for three reasons. One is the consistency with which it considers all settings in terms of place, activities, and people, and their interconnections (*behavior setting* is the term used rather than *context* or *situation*). The second is the attention it gives to departures from behaviors regarded as ideal in children and in adults. The third is the way this approach has flowed on to others' descriptions of situations or contexts (cultural contexts included) in terms of place, activities, and people (e.g., Weisner, 2002).

The transition from home settings to childcare and school settings provides one example of attention to all three aspects together: as acting upon one another and as having cumulative effects. That transition is seen as involving shifts in site, in the kinds of activities that are expected to occur, and in the ratio of adults to children. That combination may well make the transition difficult for many children. It may also influence the behaviors of both children and teachers (Barker & Wright, 1955).

As an example of that flow of effects, we take an episode described by Barker (1968). The site is a classroom. The children are 7 years old. The activity to be organized is to be like the performance of a rhythm band. There are not enough instruments for each child, and the teacher gives red pencils to the children who miss out on an instrument. They are to wave their pencils in time with the band. One child given an instrument, however, was not cooperating, "was acting silly" (Barker, 1968, p. 171). The teacher then took away the instrument given to him, passed it to a child without one, gave the less cooperating child a red pencil to

wave, and placed him on the far side of the piano: the side away from the class.

In this and other episodes, all three aspects (place, activities, and people) are seen as contributing to what happens. In this case, the classroom site is small, with little room for alternative activities. The activity offers few alternatives. All the children in the class are expected to participate and to coordinate precisely with what the others do. The ratio of teachers to children (there is only one teacher) means that there is no extra person to provide alternative activities or encouragement for those less interested in participating. All three circumstances make it more likely that some children will be reluctant to participate, and that the teacher will develop a more authoritarian and less flexible style.

**Place.** As a way of describing contexts and development, place has been considered sometimes in terms of physical spaces, sometimes in terms of social spaces (e.g., routes to a different level of education), and sometimes in terms of social meanings (e.g., links to a sense of belonging or identity). That diversity may have both positive and negative effects. On the negative side, it may become difficult to recognize the particular aspects of place that people have in mind when they use terms such as *neighborhood* (e.g., Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume; Nicotera, 2007). It may also make it seem difficult to consider place as a unit of analysis.

More positively, diversity in what is implied also prompts attention to what is common, for example, an interest in boundaries, barriers, routes or paths of several kinds (e.g., entry, exit, or recovery routes). Common also is interest in divisions of space in relation to people (e.g., divisions by gender or age, or provisions of sheltered niches for the more vulnerable). Prompted as well are questions about interrelationships among aspects of place. Ethnic distinctions, for example, might be expected to diminish in the course of weakened physical boundaries (e.g., as people flow out of an area once marked by most people having the same ethnic background). The reality, as Barth (1969) pointed out in a still highly influential argument, is often one in which ethnic groups seek to maintain or generate a sense of difference, regardless of the loss of other kinds of boundaries. When, why, and how this happens then become the questions to answer.

That interest in interrelated aspects of space brings together the physical and the social. The emphasis, however, may fall on one aspect rather than the other. Within psychological analyses of development, for instance, the emphasis often falls on children's knowledge of the routes

that lead from one educational level to another and on their readiness to follow those routes (e.g., Cooper, Dominquez, & Rosas, 2005). The physical aspects of place then seem to drop out of the picture. In similar fashion, it is possible to ignore the connection between place and children's competence that Labov (1972) found in African American children's ability to use completely different ways of speaking in the classroom and with peers outside school.

Those aspects, however, lead to some further ways of looking at development and some further research directions. The first is an expansion of proposals about development as a response to needs or tasks: a proposal encountered in the course of considering studies of universals (Line 1). In regions where food supplies call for travelling among islands, people develop and pass on navigational skills. When communities continue to live in the same space, particular skills and associated values are likely to be consolidated and in turn, to give rise to an increase in cultural differences and cultural diversity (Whiten, Hinde, Lalande, & Stringer, 2011).

As an example, we take a study that brings out the significance to children of learning safe ways through spaces. Children who were new to a school were asked to draw pictures of places where they felt comfortable or not comfortable. Often included in the uncomfortable and, if possible, avoided set were school areas where children felt unsafe: areas, for example, "where there are fights" (Sampson & Gifford, 2010, p. 128).

Safe/unsafe distinctions also bring out the presence of several bases to learning. One undoubtedly consists of direct encounters with open or closed access. Mountains with no clear paths restrict access to other areas. So do the restricted opening hours of schools, shops, and banks. A second is likely to be the presence of paths already established by previous generations. A third is the occurrence of direct instruction. A fourth may be an intuitive sense of what is possible or wise and what is not. Little or no experience or instruction may be required. The gloomy inner depths of forests, for example, may quickly be seen as unsafe and best avoided. A further base consists of narratives about place. Narratives have come to be given increasing attention in accounts of socialization (e.g., Miller, Fung, Lin, Chen, & Bolt, 2012). Narratives about safe and unsafe places, however, have attracted surprisingly little attention. Fiske (1991) draws brief attention to them, but leaves a great deal unexplored. We might ask what kinds of narratives are likely to be told.

Likely to be passed on when paths are not well established, for example, are accounts of people who have

managed to explore uncharted and dangerous areas and have made their way home. Passed on to children at an early age appear to be narratives that warn them about venturing into unsafe areas. Often told, for example, are stories of ghosts and ghouls, of wolves, dragons and trolls, all containing messages about the dangers of wandering away from a known base. If you do wander, the story of Hansel and Gretel adds, leave a trail behind you, even if it is only a line of crumbs. Learning about safe/unsafe areas, however, is far from confined to early ages. It is, for instance, often a major concern for parents when their adolescents do not disclose where they might go or have gone. There is much to lose when interest in contexts and development is confined to one life-phase.

**Activities.** Analyses of development in terms of activities—analyses that start primarily from what people do—have a considerable history, related to more than one conceptual position and one discipline. They have also varied considerably in the aspects of activity that have attracted attention. We focus on three. The first has to do with distinctions among activities, and the second with nonparticipation: its nature, its course, and its bases. The third has to do with principles or conventions related to joint activities: agreement, for example, on what each person involved in a joint activity should contribute and when they should do so.

Two distinctions among activities have attracted particular attention and are especially relevant to analyses of contexts and development. One singles out activities regarded as cultural practices. The other singles out activities usually described as forms of participation. These two do not exclude one another. They do, however, attract different proposals about development.

The term *practice* is usually reserved for routine ways of doing things that people come to think of as normal or natural, seldom think about or question, often find uncomfortable to change. Within analyses of practices, ways of thinking and ways of acting are also often seen as interconnected rather than separated. Ways of thinking, for example, are seen as often growing out of accumulated ways of acting, with changes needing to start from changes in practice. To take a much-used example, the first step toward changes in gender schemas and attitudes may need to be changes in our everyday ways of "doing gender": gendered separations, for example, of spaces and of tasks or occupations.

Conceptually, the starting point for an emphasis on practices comes more from anthropology than from psychology. Ortner (1984) provides a short but informative review

of its rise in anthropological analyses of contexts and of what people feel they should do. Overall, Bourdieu is the most often cited source (e.g., Bourdieu, 1990; Bourdieu & Passeron, 1977). In these anthropological sources, however, there is little reference to the lives of children. Miller and Goodnow (1995) and the several papers in Goodnow, Miller, and Kessel (1995) fill part of that gap. Helping to fill it are also studies of family routines (e.g., Fiese, Foley, & Spagnola, 2006). Family routines, however, do not always qualify as cultural practices. As we have noted, the adjective *cultural* adds the quality of being widely shared. Children are then likely to be given the same message from several sources; making some ways of thinking or acting seem all the more right or normal. That communally shared quality and its impact, may not always apply to family routines.

Within analyses of child development, distinctions among activities are often drawn in terms of the nature of participation, coordination, and collaboration (e.g., Rogoff, 2003; Rogoff et al., 2007). Within these analyses, the usual reference is to activities where people work together in face-to-face fashion. They then have direct access to each other's actions and perhaps intentions.

What further forms might analyses of activities and participation take? For one step in this direction, we turn to an observation by Lave and Wenger (1991). They noted that coordination does not always take the form of people working together in face-to-face fashion. Instead, people may be expected to develop skill in various parts of an action, with the team then needing to be sure that others will know their part well and will perform it at the expected time. A crew bringing a ship to shore provides an example. Activities calling for that kind of coordination have primarily been considered in terms of adult cognition. They are significant, however, at all ages. They also bring out a further aspect to development: the development of trust. Parents or other guides are likely to aim for coordination and trust over and above children's intellectual or physical abilities to carry out a task. In some cultural contexts, it may also be regarded as an intrinsic mark of maturity, and at times as more significant than changes in capacity (e.g., Serpell, 2011; Serpell & Jere-Folotiya, 2008).

Analyses of development are often shaped by the wish to account for approved changes or for ways to promote them. Both novices and experts have then usually appeared as willing and interested participants. In some analyses, however—mostly anthropological—experts have been described in less positive terms. They are sometimes seen as protecting their knowledge, passing it on only to a selected few (e.g., Bourdieu, 1990), or as sometimes

extending an apprenticeship as a way of prolonging cheap labor (e.g., Lave, 1991).

In analyses of childhood, however, reluctance on the learner's side has often been the focus (e.g., Kuczynski & Hildebrandt, 1997, emphasizing the need for models of both conformity and resistance). As a specific example, we take children's ideas about school. That topic has been a source of two conceptual approaches (Hartas, 2011). In one, participation is seen as an individual's choice. Teachers may describe those who choose not to participate as disaffected, as deviant, or as strugglers opting for nonparticipation as the safest way to act (Blumenfeld et al., 2005). In the other approach, nonparticipation stems from the nature of the situation that students see themselves as facing. Students in several English high schools, for instance, described their schools as offering only token forms of participation, as failing to match what students saw themselves as needing, and as concerned only with some students. In the words of one "disaffected" student: "Only the very clever or the very bad get...attention" (Hartas, 2011, p. 108).

As an addition to school settings, we turn to activities where children's presence is not compulsory (e.g., organized sports or other clubs; Caldwell & Smith, 2007). Here nonparticipation can take the form of staying away or participating only in the available social networking. Whether adolescents stay in these activities often depends on the extent to which there are opportunities for choice, control, or variation in what they do. They often drop out when these opportunities are not present, or when there is no compensation such as opportunities for social networking. These proposals, based on observations of free-time activities among adolescents in Cape Town, point to a direction that would extend developmental analyses of both participation and nonparticipation.

**People.** Like analyses of activities and participation, analyses of the role of people now have a considerable history, stretching across more than one conceptual position or discipline. We focus again on three shifts. The first has to do with the social and personal meanings that people attach to what they observe, and the second with the role of people as audiences or evaluators. The third has to do with the significance of relationships among people.

We have seen the importance of the meanings that others assign to changes in competence: not always the status that new learners expect. We now add the meanings attached to how space is divided among people. To take one example, adults often add both social and moral meanings to the way



space—sleeping arrangements especially—are divided among family members, often regarding those meanings as grounds for uneven distributions of space, shared spaces, or not using all the space available (Shweder, Jensen, & Goldstein, 1995). The meanings children attach to such divisions of space seem likely to cover both social and moral issues.

A familiar interconnection between people and activities is Vygotsky's (1978) analysis of the zone of proximal development. Development starts with a learner being assisted by someone more expert. Help then diminishes up to a point where the learner—the novice—no longer needs this kind of help. The expert then steps back. That kind of interconnection has come to be taken for granted. In contrast, there are surprisingly few developmental studies of people in the role of audience. Banerjee (2002) noted the scarcity and provided an example. Children aged 6 to 11 varied in their self-descriptions when told that the audience would be an unfamiliar peer or an unfamiliar adult, and whether those in the audience preferred “clever people” or “sporty people.” Variations were more marked at the later ages, but some were present already at Age 6.

In a different kind of study, an unfamiliar adult asked pre-school children to draw a person: a standard procedure in many tests of developmental status. The children produced images of people who were upright, not moving, and had all parts “present and correct.” Drawing for themselves, however, on paper often discarded, they played with more demanding and imaginative images: people who were, for example, often bending or moving, and with fewer standard parts. Audience sensitivity can clearly start at an early age (4 to 5 years in this case) and take some particular forms (Goodnow, 1990).

The third example we select considered changes, over the course of gaining expertise, in the audience that people kept in mind (Oura & Hatano, 2001). In the early stages of learning—learning to play the piano—the teacher was the primary audience. Learners played with this particular person in mind. His or her judgment was what counted. The significant audience changed, however, when people began to play in competitions or in concert performances. Then they began to consider what this new audience expected to hear and, at a more advanced level, how far audience tastes might be extended to a new piece or a variation on a familiar one. People as audiences remained important. What changed was who they were, their possible diversity, and the need to estimate what they might expect.

People are always part of a relationship. This aspect of people and contexts is a strong part of proposals to the

effect that all learning and all interactions among people are imbedded in specific relationships. Relationships, to repeat an earlier point, are also a major part of participation principles. Those principles are often about “*relational* rights and responsibilities” (Stone et al., 2012, p. 72, italics in original), setting limits on “how, what, and with whom conceptual and/or concrete tools are expected to be used in learning activities” (pp. 72–73).

In an innovative and more integrative move, Stone et al. (2012) made people part of a proposed four-part unit of analysis. Instead of Barker's (1968) unit of place, activities, and people, they proposed the unit of “an ensemble of relations enclosing self, tools, tasks, and others that is inter-subjectively constructed and sustained over time in formal and informal learning environments” (p. 66). Conceptually, Stone et al. (2012) described this and other proposals as influenced by Bourdieu (1990). From that work, but with reservations, they derived a strong interest in ways of thinking and acting as practices, and in the views people develop that cut across practices or situations (essentially covered by Bourdieu's term *habitus*).

The reservations that Stone et al. (2012) expressed were predominantly about what they saw as a “reproductive” bias in Bourdieu's proposals: a bias seen as overlooking the importance of agency and of intersubjective processes. They saw too little attention to the “communicative processes to coproduce knowledge and . . . to interpret, (re)shape and (re)create it for themselves” (Stone et al., 2012, p. 68). They also saw Bourdieu's account as neglecting the perceptions people develop of themselves, others, and relationships. The examples considered in detail were drawn predominantly from classrooms. The same kind of description, however, was brought to simpler activities: activities such as a mother reading a book to an infant. Here there is a combination of self, of other, and of a relationship. Here also is a tool (the book in this case) and a task: a task that calls for achieving some sense of an action to which both contribute and some coordination of actions and meanings. The participants may not necessarily achieve a shared meaning (“inter-subjectivity can . . . include disagreement and agreement, consensus and conflict”; Stone et al., 2012, p. 70), but both have a sense of contributing to whatever emerges. This is certainly a complex but provocative way of considering, as units of analysis, interconnections among tasks, tools, self, and others.

In the main, analyses of place, activities, and people focus on the development of competence. Implied then is a particular dichotomy: a separation of cognitive from social development. One move away from that separation

is a reminder that tasks and areas of competence always have a social meaning. Some, for example, are regarded as significant areas of expertise. Others are seen as trivial pursuits. No form of expertise can then be seen as “purely cognitive” or, for that matter, “culture free” (D’Andrade, 1981). The relevance of competence to social meaning and social status appears also in Lave and Wenger’s (1991) comment on the common assumption that an increase in competence will bring with it a change in social status. The end of apprenticeship, it is often assumed, will lead on to membership in a community or guild of experts. That does not always occur. Rogoff (2012) adds the important point that a change in competence alters not only social standing but also a sense of personal identity. The life course of a Mayan midwife is a prime example. Her sense of fulfilling her “destiny,” and becoming recognized as the top midwife in her community depended on more than expertise. It depended also on her commitment to a new role and her readiness to give up some other activities or to accept their disruption in order to meet the demands of a midwife role.

### ***Questions and Directions***

As we did in Line 1, we ask how Line 2 expands our understanding of the intertwining of cultural contexts and development. Conceptually, Line 2 introduces a broader set of comparisons. These are not only across cultural contexts but also within them. Line 2 also expands the descriptors and dimensions used as an interconnected set for any comparison. The set now covers places, activities, and people. The interweaving now becomes more complex and more rewarding.

The studies by Barker (1968) and his colleagues drew attention to the significance of considering all three together in any setting. As an example of how this kind of approach may be extended, we single out a study called *Children of the Land* (Elder & Conger, 2000). The diverse circumstances fed into parents’ decisions to leave or stay on a farm. These included the land’s productivity, the availability of alternate occupations or funds to help meet new demands, opportunities for children, the significance of the farm as a part of family history, and the significance of geographic closeness to other members of the family. This study also brought out the selective nature of effects on people. A sense of loss appeared to be most strong among fathers who had grown up on the farm, less strong for women who had married into farm life, and least strong for adolescents who knew some of their peers had gained access to paid work by virtue of living in town.

Making people a significant descriptor and examining their interconnections with sites and activities also highlights the social or interpersonal aspects of what is happening in any setting. Most activities have interpersonal significance. Other people are always part of the picture. They now do more, however, than present tasks and provide resources. They may be organizers, helpful experts, audiences, coworkers, or part of an accompanying social convoy. With that expansion, the active contributions by children also become salient. Their roles move further away from the role of passive child and beyond the alert observer seeking ways to solve a problem. In some situations, children take the lead and adults need to respond. When they are invited to participate in a joint activity, children also have the capacity to join or to resist, to willingly take part or to let their unwillingness show. All of these forms of participation change the activity, the relationships among people, and the provisions that the situation makes for them.

Accompanying the change in perspective is a related shift in research approaches. Comparisons may still be made across cultural contexts, directly or implicitly. Now also seen as useful, however, are comparisons across generations, across positions in a group (e.g., advantaged or disadvantaged), or across circumstances (e.g., times of large or small changes). Increased attention to tasks and measures brings out also cognitive and social aspects to the development of competence. Imitation is one such task. Children may under imitate (discarding irrelevant moves) when their goal is one of improving their problem-solving competence. In contrast, they may be less selective, or select in different ways, when the aim is to show that they admire particular people or wish to be seen as like them (Over & Carpenter, 2012). That phenomenon is obvious when older children imitate the ways in which selected others dress, speak, or communicate with one another. Over and Carpenter (2012) however, highlight its occurrence at an early age.

The social aspects to children’s participation emerge also in tasks where adults differ in the information they provide. One adult, for example, says that an unfamiliar fictional animal is called an X. Another says it is called a Y. Whose advice do children follow? This kind of study is a check on the assumption that young children place an indiscriminate trust in adults as informants. Children as young as 3 years of age turn out to be selective in their choices of whom to trust (Harris & Corriveau, 2011). In one set of studies, children based their choices on past interactions with the people offering information. In a second set, when informants were unfamiliar, children

followed the advice given by informants they saw as like themselves in appearance or as people approved by others. Overall, Harris and Corriveau (2011) conclude, “even if children are surprisingly indiscriminant in choosing *what* to believe, they are nonetheless quite selective in choosing *whom* to believe” (p. 1180). They judge the sincerity and trustworthiness of other players. Young children also emerge as being aware of shared conventional knowledge (Diesendruck & Markson, 2011). They not only know what does and should happen, but they are able to specify their own roles, and give them descriptions (Banerjee, 2002).

Like Line 1, Line 2 leads to a clearer understanding of cultural contexts and child development, and points to an expanded set of conceptual and research approaches. What then is added by a further line of analysis that focuses on changes in situations and on diversity in the ways of thinking and acting that children encounter?

### **Line 3: From Continuity to Change, From Uniformity to Diversity**

Within early analyses of culture, the emphasis often fell on continuity. Continuity, or the aim of continuity, was regarded as the defining characteristic of culture and the aim of each generation. Geertz (1973), for instance, defined culture as “a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about and attitudes toward life” (p. 89). Shifts then took the form of increasing emphases on the occurrence of change as a marker not only of modern society, but also of all cultural contexts.

The earlier emphasis often fell also on monolithic ways of thinking or acting that all people in a social unit shared or were expected to share. That monolithic emphasis was often expressed in the form of differentiating among cultures by labels such as Christian or Islamic, collectivist or individualist. A major shift was the recognition of heterogeneity and diversity. The optimal perspective involved recognizing that in any social unit there always is more than one way of thinking or acting: more than one political view, one form of schooling, one form of worship, one approach to child-rearing. Sometimes, contest or competition among these varied ways was no problem. At other times, contest was accompanied by efforts toward maintaining hegemonic status, suppressing or keeping on a lower rung any alternatives or challenges (Gramsci, 1971). Shifts away from emphases on continuity and on monolithic views of culture are not unrelated. The presence of diverse viewpoints may make change more likely to occur. The starting points for

the two shifts, however, are not the same, and we take them up in turn.

### ***From Continuity to Change***

A shift in emphasis does not involve treating continuity and change as either/or alternatives. Both occur. For change, the challenging questions then have to do with what changes, at what rate, who is most affected by it, who pushes or resists it and why, and what resources they use to promote or resist change. A first distinction has to do with the size and predictability of change. Some changes are large and unpredictable. Others are experienced as small and predictable. We start with the large and unpredictable, with the recognition that how people respond to these changes—their sense, for example, of helplessness or of hope for the future—is also relevant to analyses of smaller changes.

Research on *large-scale changes* now covers a wide field. It has also shown a major increase in the last two decades (e.g., Elder, Shanahan, & Jennings, Chapter 2, this *Handbook*, this volume; Masten, Naryan, Silverman, & Osofsky, Chapter 18, this *Handbook*, this volume; Silbereisen & Tomasik, 2010). Considered have been large economic shifts (e.g., global economic downturns), large political shifts (e.g., the breakup or reunification of a country, or an internal revolution), natural disasters (e.g., tsunamis, earthquakes, floods), technological changes (e.g., the invention of the printing press and the computer), or as taken up in Line 4, large population flows from one part of the world to another.

Among studies of *large economic changes*, we choose as a starting point a longitudinal study by Elder (1974) on the effects of The Great Depression on family members within the United States. We single it out at this point, because it contained an early recognition that effects were not the same for all family members: a within-family variation that has increasingly become a focus of interest in analyses of all changes (Elder et al., Chapter 2, this *Handbook*, this volume). Children who were already adolescent showed fewer long-term adverse effects than did younger children, perhaps because of a difference in the opportunity to engage in part-time work. For that work, they were often paid at lower than adult rates. Those amounts, however, still made a significant and appreciated difference to the family income.

Several other studies extended that line of research. Conger, Schofield, Conger, and Neppl (2010), for example, considered the flow-on effects of the economic downturn in the United States in the 1990s. Links to development, they proposed, stemmed from two processes. One was

social causation in the sense that developmental changes were driven by the economic shift. The other was social selection in the sense that consequences differed across individuals. Those who had shown more distress as adolescents during the economic downturn also experienced later difficulties as parents of young children.

As an example of *political change*, we take the end of division between East and West Germany. Up to that point, political changes were mainly seen as increasing risk. The shift was to regarding them as a mix of risks and opportunities, especially for young people from East Germany. They now had the opportunity to move away from home at younger ages (e.g., Juang & Silbereisen, 2001). A further example comes from political changes in Turkey. After the establishment of the Republic of Turkey in 1923, the shift was toward a secular nation, compulsory schooling, the provision of family planning services, and a general change from a rural to an urban population (Ataca, Kağıtçıbaşı, & Diri, 2005). The striking outcomes were a drop in the size of families and a change in gender hierarchy. This took the form of moves away from a father's complete authority and from a marked preference for sons over daughters. Those changes were widespread, but again selective. In rural areas, a larger number of children than the advocated two per family seemed to reflect less easy access to family planning services.

There is now available a series of studies focused on children's experiences of *natural disasters*, war and violence and on procedures for intervention after their occurrence (e.g., Masten & Osofsky, 2010; Masten et al., Chapter 18, this *Handbook*, this volume). As an example, we take a study of the aftermath of the Indian Ocean tsunami of 2004 (Exenberger & Juen, 2010). Children differed in their sense of subjective security and wellbeing five years later. Children still living with one or both surviving parents often commented on their fear. Tsunami-related triggers still scared them, but they had overcome their fears of the sea and now enjoyed the seaside. In contrast, children living in out-of-home care in children's villages mentioned the orderliness of their lives and the availability of the food and shelter that the family-based children did not have.

*Technological change* provides a different set of circumstances. As a specific example, we take a study by Hansen, Postmes, van der Vinne, and van Thiel (2012). They analyzed the effects of providing a laptop to a group of children in Ethiopia: a country where fewer than 10% own a computer or have access to the Internet. In 2008, the government distributed 6,000 laptops to children in several rural and

urban schools. The 169 children in a follow-up study were in the 12-to-16 age range. They all attended the same school in a small city in Northern Ethiopia. There were 69 students who could still use their laptop, 24 whose laptop had broken down, and 76 who did not receive a laptop. At the end of the year, those who still had a laptop in use, compared with the other two subgroups, showed a stronger view of themselves as independent and a stronger endorsement of the value of individualism. Among the processes that underlay these effects were the usage of the technology (a broken laptop produced no such change), and gaining higher status where ownership of anything as valuable as a laptop was unusual.

*Conventional change* is at the opposite end of the range to large and unpredictable change. Studies of transitions to school are relevant, in large part because they have been seen in two quite different lights. In one, the transition has been seen as a small and expected change. In the other, this transition is recognized as a major change. What has been allowed or encouraged at home, for instance, may not fit with what is expected in school. In Fleer and Hedegaard's (2010) close analysis of this kind of change, for example, one boy's free use of space and "wandering" at home was sharply discrepant with the expectation at school that he would sit in one place and pay attention only to the teacher, and not to other children. He could no longer roam with either his feet or his eyes, and his skill in keeping track of events around him was not valued. In keeping with a frequent attribution, the teachers interpreted difference as deficit and sought to have him referred for help with an attention deficit disorder: a referral resisted by his parents.

A study by Entwisle and Hayduk (1978) focused on variations with social class is an example of how the transition to school is minor for some children and families but not for others. Parents of the educated middle class put effort into preparing their children for the move. They also looked for ways to maneuver around its rules: checking on any differences among teachers and on how to arrange for their children to be in classes taught by preferred teachers. In larger terms, these variations are not simply an example of differences in social class. They are also an example of differences in what has been described as cultural capital (Bourdieu & Passeron, 1977). At the far end of the scale, appear to be children with a refugee background. For them, the first day of school may be like stepping into an unknown world. There may be no advance preparation for what they are likely to encounter. For some older children, it may also be their first experience of school. For others, there may be no sense of making the transition along with others who are



at least close to them in age. In one example from ongoing research by Brooker and Lawrence, a 19-year-old refugee finds himself not only in school for the first time, but also being placed in a class where everyone else is 15 or 16 years old and has been in school since the age of 5 or 6.

### *Change and Persistence*

The focus on change has been a needed shift from the focus on continuity across generations. When that shift becomes completely one-sided, however, the challenge involves accounting for what Patterson (2010) called the “puzzle of persistence” (p. 139). The practice of female circumcision, for instance, persists in countries where, after long tradition, it has been declared illegal. It also persists when families move into a country where most people regard the practice as an unthinkable mutilation, a violation of basic human rights, a form of child abuse and, for all these reasons, a practice to be stopped, with a first step being its formal declaration as illegal (e.g., Barstow, 1999).

What then makes such a practice persist? Several proposals have been offered. One is the presence of multiple justifications: a strong indication of a practice with multiple bases. Barstow (1999), for example, lists 19 justifications, ranging from religious sanctions through to ways of ensuring virginity and chastity and being regarded as clean, honorable, beautiful, and marriageable. Another is widespread resistance to change (e.g., Shweder, 2000). Women are often reluctant to challenge or depart from tradition, driven by fear of social isolation and of being regarded as strangers in their own communities. Girls have expressed similar concerns. In their experience, uncircumcised girls are bullied or teased, excluded from activities such as the preparation of food, treated as “unclean,” and denied being recognized as a woman rather than a child (Yirga, Kassa, Gebremichael, & Aro, 2012). Objections to the practice are also often set aside as coming from outsiders who do not understand its significance and meanings (Khaja, Lay, & Boys, 2010).

From studies of persistence in all its forms come further proposals. In some, practices are seen as persisting because they suit people with vested interests and power (Bourdieu & Passeron, 1977; Gjerde, 2004). In others, persistence stems from the absence of change in the concerns or circumstances that prompted the practice in the first place (Barth, 1993). Patterson (2010) adds to these the extent to which a practice has become normalized (“this is what everyone does”) and part of people’s identity and social acceptability.

Justifications, however, are still not the final word on continuity and change. For all practices, analyses of change have highlighted the need to ask more specifically what changes and what continues, for how long, and whether those shifts are common to all social units. Fuligni (2012a) raises those questions in relation to immigrant families who have been in the United States for more than one generation. First and second generation immigrant children with Asian backgrounds, for instance, do better academically than do children with nonimmigrant or Hispanic backgrounds. By the third generation, however, their academic aspirations and performance become more like those of their nonimmigrant peers. Once again, what appeared to be a simple dichotomy—in this case, a distinction between children with and without particular immigrant backgrounds—turns out to need refinement by recognizing that persistence and change should be considered together. Whether one or the other occurs in relation to particular ways of thinking or acting depends on particular circumstances. Predicting any outcome, to take a comment from Fuligni (2012a), might best start from the view that “it all depends” (p. 305).

### *From Uniformity to Diversity*

Cultural contexts have often attracted the perception that they are marked by widely shared ways of thinking or acting, and that these do not differ greatly from one person to another. A contrasting perspective places its emphasis on diversity or heterogeneity. That perspective has a strong starting base in both sociology (e.g., Gramsci, 1971) and anthropology (e.g., Strauss, 1992). In both, it has also been accompanied by interest in how people respond to challenges or questions related to their own ways of thinking or acting, and in their strategies for achieving different outcomes to the contest. We start with how people respond to challenges or questions. Is their response, for instance, one of tolerance or an attempt at suppression? We turn then to the strategies people use to achieve their preferred outcomes and the circumstances that may prompt one strategy rather than another.

### *Levels of Tolerance for Departures From Expectations*

Some departures from conventional ideologies or practices may be regarded with amusement or interest, or even as having positive effects. Within families, for example, parents and children may see differences as an opportunity to work a problem through in ways that promote developmental change for both generations (Scabini, Marta, & Lanz, 2006). Response to a break from the norm may

also depend on the extent to which the value challenged is regarded as significant, with parental responses more authoritarian in style when the value challenged is highly regarded (Padilla-Walker & Thompson, 2005). Response may also be affected by the timing of a challenge. Parents, for example, may easily tolerate behaviors regarded as not likely to last, as “just a phase.” They may be less tolerant if the same behaviors persist when children are older (Dix, Ruble, Grusec, & Nixon, 1986). In broader terms, within families and in other contexts, “the construct of tolerance reflects a discrepancy in response from what is normative” (Brestan, Eyberg, Algina, Johnson, & Boggs, 2003, p. 12).

To that broad proposal, we add attention to what people find completely intolerable. Studies of this response have been primarily at the adult level, but these offer some guidance about what we might look for when children are involved. Some ways of thinking and acting are certainly regarded by adults as unthinkable, heretical, or taboo (e.g., Tetlock, Kristel, Elson, Green, & Lerner, 2000). One basis for those evaluations seems to be the perception that there has been a serious break in the expected nature of relationships. “This is supposed to be a family,” for example, was the horrified response to one sibling grabbing what other family members expected to be shared with them when a parent had died (Goodnow & Lawrence, 2013). In similar fashion, a marriage partner’s sense of a caring relationship disappears when the feeling arises that a partner is exploiting the relationship, taking advantage of what has been freely offered and making no attempt at reciprocity (M. S. Clark, Graham, & Grote, 2002). Questions still remain about how far a concern with reciprocity exists, or takes the same form at different ages and in different cultural contexts. At the least, expectations of reciprocity have appeared across all adult life phases (Lang, Wagner, & Neyer, 2009).

### *Strategies for Achieving Hoped-For Outcomes*

What do people do when they encounter ways of thinking or acting that they see as conflicting with their own? It is clearly not enough to say that these encounters are regarded with more or less surprise or tolerance. To be added are observations of the varieties of strategies people use and the bases for turning to some rather than others. Ogbu’s (2004) description of the history of Black America is a major example of variations. Strategies often changed from one historical period and one situation to another but all carried their own costs. In one—not an option for some—people left an area or a country. In another, people disguised the way they felt, or redefined themselves, for

example, as warriors (freedom fighters) rather than as victims. Some found ways to “pass as White,” others varied the way they acted and the language they used from one situation to another.

Those strategies are not limited to African Americans. In all cases, however, we need to ask about the circumstances that promote them. For these, we draw material from studies of four strategies: *nondisclosure*, *disguise*, *changing course*, and *negotiation*. *Nondisclosure*, for instance, may be necessary for survival. Going underground may be the only option. With less risk, being open may bring to the surface a past that is regretted, is incompatible with one’s current image, would be difficult for one’s family to accept, and is best forgotten or not discussed. Being open may also invite restrictions. Disclosure to parents, for instance, may make it impossible to maintain activities that, once known, would invite parental intervention (Stattin & Kerr, 2000).

*Disguise* is a particular self-protective strategy that can be seen in studies of the experience of family poverty. In one example, Thorne (2005) singled out school lunchtimes in a part of California with a range of income levels. Some children could qualify for free school lunch or a reduced price lunch at the cafeteria. Others could buy lunch at full price or bring it from home. Lunchtime arrangements then were a clear signal of the family’s level of poverty: one that some children avoided by not having lunch at all. A contrasting attempt to disguise poverty is described in Hamilton’s (2012) study of 30 low-income families from urban areas in Northern Ireland. The predominant strategy in that group was one of conspicuous consumption. In excess of need, mothers often bought expensive brand name products, especially for their children. Paradoxically, that strategy often led mothers to “encounter the very stigmatization that they set out to avoid” (Hamilton, 2012, p. 87).

For strategies in the form of *changing course*, we take again a study related to income. This time the concern is unpredictability rather than level. When income is erratic, for instance, family routines often become difficult to sustain. Childcare arrangements that carry financial costs may be sometimes affordable and sometimes not. In the face of unpredictability, however, parents change course and rely completely on the provision of care by family members (Lowe, Weisner, Geis, & Huston, 2005). Changing goals related to schools provides a different example. Both children and parents may seek to avoid circumstances where the children face what they see as repeated failure. Leaving the situation—leaving school—may not be an

option. Children then may turn to sport as a main interest (Eckert, 1989).

*Negotiation* is the last strategy we consider. We shall see more of it when we turn to Line 4 and change and diversity in relation to immigration and acculturation. The core issues, however, have consistently to do with what is negotiated, why, and how. Negotiated, for example, are forms of work, support or in more culture-oriented fashion, identity. People may seek to be identified as a “genuine refugee” rather than an “economic refugee.” People may also seek to be identified as someone who has been in the area long enough to be regarded as a full member rather than as a stranger or a newcomer. There may be several reasons for negotiation. A direct battle, for instance, may carry too high a cost, especially in relationships that are expected to last. The more effective strategy may then be one of compromise, of meeting others half way between what you and they want; a strategy noted in studies of Japanese adult children and their parents (Izuhara, 2004). Young children may also use the same half way approach, or search for ways that will persuade others to change their position (Kuczynski & De Mol, Chapter 9, this *Handbook*, Volume 1). This avoids the appearance of simple refusal or noncompliance but, at the same time, allows children to achieve their objectives. We may well expect that cultural groups will vary in the kinds of arguments they find to be reasonable or persuasive. In all groups, however, even young children seem to test the effectiveness of various ways forward, looking for strategies that will carry some hope of success and avoid punitive responses. In effect, the strategies people use are largely related to what they feel is the nature of the threat, to what the situation allows, and to what resources are available and accessible.

### *Questions and Directions*

Line 3 brings out the complexity of the web that interweaves cultural contexts and developing children. Early views of cultural contexts as constant and unchanging give way to recognizing that they are more often fluid and changing, presenting children with both opportunities and constraints. Early views about children encountering a world of single messages about what can or should be done give way to recognizing that cultural contexts often present them with diverse and competing messages that may be experienced as exciting, or as confusing and threatening.

To the close analysis of the changing and diverse nature of cultural contexts, we now need to add closer analyses of the parts that children play, and how the part played by the cultural context and the part played by the children

intermesh and coordinate. Children interpret what is happening. They develop strategies that may make it easier to cope with or to benefit from the shifting and competing worlds they encounter. In related fashion, people who see themselves as responsible for children develop interpretations and strategies for themselves and offer some of these to their children. Given the variety of experiences that is possible, and the variety of interpretations and strategies that people generate, it is not surprising that the significance of change and diversity may vary a great deal from person to person. The issues now needing further investigation are the nature of interpretations and strategies, the circumstances in which people change and, a point emphasized by Lerner (2011), the extent to which people’s intentions and actions are likely to have beneficial effects for both themselves and the context. Among the bases for adult strategies are likely to be their views of children and what children can and should be able to manage. Among the bases for children’s strategies are likely to be where they see themselves as standing or wishing to stand in relation to other people in the context (Over & Carpenter, 2012).

Research procedures may once again involve the choice of children to compare, taking note of the selective nature of their experiences and what has followed from them. In the face of adverse circumstances, one research choice may be a focus on those who “manage to make it” (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999, p. 1), then comparing them with those who did not do so well (Masten et al., Chapter 18, this *Handbook*, this volume). Another choice is to ask less about levels of change and more about areas of recovery or continuing difficulties (e.g., Exenberger & Juen, 2010).

In the face of diverse and competing ways of thinking and acting, the comparisons of particular interest are likely to involve the strategies that adults use to keep children within their cultural boundaries. One is to erect barriers to other experiences and interpretations. Children in highly orthodox families may be protected from knowing people with different beliefs or even reading anything but approved material (Lawrence, Benedikt, & Valsiner, 1992). Another consists of allowing children to know about other ways of thinking and acting, while encouraging them to avoid making commitments to these alternatives, or becoming like people regarded as “them” rather than “us.”

In the face of changing or competing cultural contexts, research procedures need to focus on understanding people’s various interpretations and strategies, and on the ways in which these may change or be changed. Those moves,

however, need to be governed by respect for what has been experienced and for what has developed in relation to a particular cultural context, together with an awareness of vulnerability to further harm in the course of investigations and interventions intended to be helpful (Lawrence, Kaplan, & McFarlane, 2013). How to achieve research governed by respect is still an open issue, especially given the likelihood of differences being interpreted, even by researchers, as deficits (Cole, 2013).

#### **Line 4: From Single to Multiple Cultural Contexts: Analyses of Acculturation**

To this point, we have mostly considered change, continuity and diversity in ways of thinking and acting within a single cultural context. It would be difficult in today's global world, however, to find a cultural context exclusively comprised of people from one cultural background. Cultural contexts have always been mixing, prompted by circumstances that range from war, through colonization, missionary efforts, and intermarriage (Foley & Mirazón Lahr, 2011). They jostle for space and dominance, and often "collide" (Chandler & Proulx, 2008, p. 374).

We now take up questions of change, continuity and diversity when cultural contexts are jostling against one another. The bulk of the material comes from studies of immigration (e.g., Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Yoon et al., 2013) or studies of people's resettlement after displacement and trauma (e.g., Goodnow, 2014; Kaplan, 2013). In all circumstances, however, the same questions arise: How far can one term—*acculturation* in this case—cover what is experienced, what changes or persists, and what responses people make to acculturation experiences?

#### ***Acculturation and Approaches to Change***

Like the term *culture*, *acculturation* suffers from an over-supply of definitions (Chirkov, 2009). Like the term *culture*, *acculturation* also has a history of unease with its meanings and use. That unease goes back to a committee appointed by the U.S. Social Science Research Council to clarify the field in 1935 (Redfield, Linton, & Herskovits, 1936). More recently, questions have arisen about whether the term refers to a state or a process (Sam & Opedal, 2003). It may refer, for example, to some people being more acculturated than others, or it may refer to the ways in which people change in the course of double or multiple cultural experiences.

We take statements from the 1935 committee's report on meanings of the term. One of these is often quoted and used as a "modal definition" (Chirkov, 2009, p. 98):

Acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups. (Redfield et al., 1936, p. 149)

Considered important were movements into majority populations by "cultural-carriers" from a donor (Western) culture: missionaries, traders, or administrators. Unlike many later researchers, Redfield and his colleagues were looking to discover the acculturative adaptations made by receiving populations already in place rather than adaptations made by the newcomers.

A further statement about possible outcomes for both newcomer and receiving groups, however, is rarely quoted:

either a reworking of the patterns of the two cultures in a harmonious meaningful whole to the individuals concerned, or the retention of a series of more or less conflicting attitudes and points of view which are reconciled in everyday life as specific occasions arise. (Redfield et al., 1936, p. 152)

Mason took up the possibility of a range of outcomes in 1955. He criticized the single direction that acculturation research was taking. He specified the need to examine effects on the donor (for him, American) culture as well as on the majority culture to which its members came:

Most students of cultural contact have neglected to examine critically the character of the more familiar, dominant group, with a consequent incompleteness of analysis and conclusions about the acculturation of the exotic group. (Mason, 1955, p. 1264)

In effect, Mason was foreshadowing criticisms of the unidirectional approach that came to mark acculturation research (Chirkov, 2009; Rudmin, 2009; Schwartz et al., 2010). This was the tendency to investigate the adaptation of incoming or minority "exotic" cultural groups to the dominant culture, in most cases the United States. The dominant single direction approach nonetheless persisted (Rudmin, 2003). An influential study by Graves (1967), for instance, aimed at understanding psychological (individualized) as well as cultural acculturation, but for the minority group:

When culturally distinct groups are placed in continuous first-hand contact, can changes in the world view of the



minority groups be demonstrated to occur in the direction of those of the dominant group; and if so, under what conditions is such psychological acculturation facilitated? (p. 337)

Graves investigated the conditions in a South Western U.S. town under which adults from a long-standing Spanish American group and from an American Indian tribal group came to adopt “Anglo” norms. He proposed that norms and other aspects of psychological acculturation were dependent on how much individuals in these minority groups were exposed to, could access, and could identify with the dominant (“Anglo American”) beliefs. His analyses paved the way for a long line of unidirectional analyses. They also pointed to how much individuals within the minority groups differed—a point that seems to have been largely overlooked in later concerns with group-level change.

Subsequent research has largely neglected the earlier promises of investigating areas of change in both cultures. Berry’s (1997) description of four types or strategies of acculturation and their relative adaptive effects for immigrants has been particularly influential, although not without significant questions about the conceptual and empirical bases of the strategies (e.g., Chirkov, 2009; Rudmin, 2009; Yoon et al., 2013). These strategies of assimilation, integration, separation, marginalization identify different orientations both to holding onto a heritage culture and to taking hold of a mainstream culture. They usually focus on changes in incoming and minority groups, rather than the receiving dominant group.

Another question has to do with the distinction between acculturation and *enculturation* experiences. In most cases, acculturation refers to changes in the course of encountering a second cultural context. Enculturation usually refers to changes in the course of experiences in one’s birth or heritage cultural context. The two terms can become confused conceptually and in how they are measured (Lawrence, Brooker, & Goodnow, 2012; Oppedal, 2006; Rudmin, 2009). There are warnings, for instance, about using inappropriate measures, especially for samples of American Indians (Garrett & Pichette, 2000) and African-Americans who have always lived in multicultural spaces (Obasi & Leong, 2010). These warnings are another indication of the inappropriateness of parachuting measures across cultural groups and situational conditions. Overall, greater attention should be given to variations in people’s backgrounds, circumstances and responses to research questions (Goodnow, 2014).

### *Taking Account of Diversity*

Earlier we noted how Graves (1967) was concerned with differences among and within acculturating groups. A study from Europe also illustrates the significance of diversity across entering groups and across receiving groups. Vedder, Sam, van der Vijver, and Phinney (2006) compared patterns of acculturation change and adaptation among young people from Vietnamese refugee groups and Turkish guest worker groups in four European countries (Finland, France, Norway, Sweden). Vietnamese young people with little expectation of returning to Vietnam were more inclined to identify with the new country. Turkish young people with the expectation of possible return were less inclined to identify with the new country, and were higher on psychological adaptation but lower on social adaptation: results that fitted with their greater ethnic orientation and lower integration. Other differences in Vedder et al.’s (2006) sample, however, were related to diversity in the conditions of settlement. Members of both the Vietnamese and Turkish groups experienced most discrimination and least integration in Norway. Norwegian society was the least diverse of the four receiving countries, and this seems to have added to the discrimination/integration differences.

For diversity within a single cultural group, Abdullah & Brown (2012) reported that religiosity and adherence to African American culture had differential protective effects against alcohol use for young men and women. Women high on religiosity did not use alcohol frequently, regardless of their adherence to their culture. For men, in contrast, low alcohol use was related to being high on both religiosity and cultural adherence.

There clearly is a need for multidimensional models of the experience of double or multiple cultural experiences. Schwartz et al. (2010) offer such a model, arguing for the inclusion of multiple directions and multiple dimensions of change, particularly change in practices and values in both heritage and mainstream cultures. They recognized that acculturation cannot be treated as a single process. They also argued that only multivariate, higher order analyses would be likely to reveal the complexities of relationships among dimensions, directions and rates of change in groups and individuals. A multidimensional model also has potential to encourage new research directions. Here we single out one research interest that focuses on whether parents and children show the same patterns of change, and the effects of concordance and discordance in the acculturation experiences of families.

### *Acculturation Differences for Young People and Their Parents*

Differences in terminology and approaches once again cloud the issues. Intergenerational differences have been variously described as acculturation differences (Costigan & Dokis, 2006), acculturation discrepancy (Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009), acculturation dissonance (Portes & Rumbaut, 2001), acculturative family distancing (Hwang, Wood, & Fujimoto, 2010), or intergenerational conflict (Kwak, 2003). Each of these concepts focuses on some aspect of distancing between parents and their children when their acculturating experiences fall out of step (Telzer, 2010).

We add two cautionary notes. First, Kuczynski, Navara, and Boiger (2011) suggest that we see this distancing as acculturation *gaps* centered on specific issues rather than as one, undifferentiated gap. The second is that the interpretation of parent/child discrepancies in immigrant families needs to include close comparisons with discrepancies in nonimmigrant families. There are recent findings, for instance, of greater concordance between adolescents and parents in mainstream families than was previously expected (e.g., Collins, Raby, & Cusadia, 2012). If the gaps found in immigrant families are seriously larger, then a closer look at the specific experiences that accompany immigration and resettlement is warranted. There were, for example, few culturally related differences in nominations of the personal strengths and school-related skills of elementary school children, as they were perceived by Somali and local Australian parent/child pairs. The most frequent differences were between all parents and their children and not between cultural groups (Dodds, Albert, & Lawrence, 2014). Among adolescents, Sam and Virta (2003) similarly found that intergenerational discrepancies were not greater in immigrant parent/child pairs (from Pakistani, Turkish, and Vietnamese immigrant families) than in comparable pairs from their host countries of Norway and Sweden. Across all these groups, adolescents were more concerned about their rights, but parents were more concerned about their adolescent children's obligations.

Some parent/child differences can be expected from immigrant youths and their parents, precisely because they live in different worlds and follow different pathways through mainstream institutions (Cooper, 2011). Children and adolescents experience everyday challenges to develop instrumental skills and expressive values in order to communicate and to act appropriately at school

and with peers (e.g., Dodds et al., 2010; Roer-Strier & Strier, 2006). Parents, especially house bound mothers, are under less pressure to adapt: a distinction that may become all the more important when their children need to be their cultural brokers (Cooper, 2011; Dorner, Orellana, & Jiménez, 2008). The exposure and access criteria, however, can work in two ways. Children may find themselves with little outside support for accessing traditional values, if the family has resettled in isolation rather than in an ethnic enclave (Padilla, 2006).

Intergenerational differences in practices often relate to the social behaviors of the younger generation. These range from smoking and drinking to sexual and violent behaviors, often with related mental health issues, especially youth depression (Hwang et al., 2010; Updegraff, Umaña-Taylor, McHale, Wheeler, & Perez-Brena, 2012). Studies of these behaviors also cover the measures that parents take in trying to protect their children from these negative accompaniments of acculturation (e.g., Padilla, 2006; Schwartz et al., 2012). Updegraff et al. (2012), for example, found that Mexican familism values helped keep children from depression and risky behaviors in the United States. With increasing age, however, adolescents moved further away from their families' traditional values. The protective effect then may be less.

Intergenerational differences in values also may disrupt the organization of family life and family goals (Bornstein & Cote, 2006; Raeff, 2006). That difference may prompt challenges to parents' long-held values and practices (Fuligni, 2012a), and challenges to patterns of relationships among family members (Kwak, 2003; Tardif-Williams & Fisher, 2009). Adolescence often brings challenges to parental authority (Fuligni, 2012a; Hwang et al., 2010; Kuczynski et al., 2011). Family disagreements often center around how adolescents prefer to live compared with how they think their parents want them to live (Unger et al., 2009). Those challenges then give rise to parental concerns about losing control and their traditional child-rearing orientations (Kirmayer, Fletcher, & Watt, 2009).

Once again, the issue is heterogeneity. Differences are often particularly stressful for parents whose heritage cultural structures do not socially or religiously align with mainstream institutional structures (e.g., de Haan, 2011; Ibrahim, Small, & Grimley, 2009; Kirmayer et al., 2009; Telzer, 2010). As one Somali father expressed it to us, unconscious of local influences already in his own language: "My kids are turning into bloody Aussies." It is not

young people's adoption of aspects of mainstream culture that most often prompts family discordance, but how little or how much they hold to their parents' heritage culture and the protective base it can afford against risky behavior (e.g., Costigan & Dokis, 2006). We need to distinguish families' deeply held values from specific arguments and disagreements (Fuligni, 2012a; Hwang et al., 2010).

The outcomes of acculturation gaps and discrepancies, nevertheless, may not all be negative (Lau et al., 2005). Their effects are likely to depend on some particular circumstances. Differential sensitivity to particular parent/child issues is one such circumstance (e.g., familism values in Hispanic families; achievement values in Asian families: Fuligni, 2011). Factors that may mediate conflict may include levels of family cohesion, demographics such as home ownership and parents' work experiences, and parental monitoring (de Haan, 2011; Fuligni, 2012b). We need more studies that trace parent-child relations over time, allowing us to consider continuance or decay of any acculturation gaps and their consequences. The study by Updegraff et al. (2012), for example, covered a five-year period and brought out the shifting patterns of change in traditional familism values and risky behaviors for adolescent Mexican boys and girls in the United States.

The complexity of these and other aspects of parent/child gaps in acculturation are brought out in a review by Telzer (2010) that pointed to several issues that can be confused when exploring parent/child differences in immigrant families. These include: the directions of difference (parent/child differences in retention of heritage and acquisition of mainstream culture); the levels (determining which generation is more and less oriented to each culture); and the domains of acculturation (everyday practices compared with deeply held beliefs and values). When these varied possibilities are taken into account, the evidence on gaps, discrepancies, and dissonances becomes less clear.

### *Acculturation Experiences and the Course of Development*

Acculturation changes can be expected as part of the normal course of development (Sam & Oppedal, 2003), although that specific relationship is unclear (Fuligni, 2012b). Acculturation changes may, for instance, be tacked onto or disassociated from normative experiences, or they may become an integral part of typical courses of development. They may also act as catalysts for change. These possibilities are not well explored. They are, however, an essential part of the complex net of positive and negative aspects of acculturation experiences—a point

made by Strohmeier and Schmitt-Rodermund (2008). All these possibilities take the issues of change out of analyses of groups and into analyses of individualized development.

One thing is clear. We cannot continue to assume that what is normative for Western middle-class society is normative for what Kağıtçıbaşı (2007) saw as the majority world. Developmental science needs both a broader view and finer ways of disentangling long-held assumptions about groups that focus on race and ethnicity (Quintana et al., 2006). We also cannot assume a one size fits all view of acculturation (Rudmin, 2003). We must ask then whose view of normative is appropriate in particular situations, and also what issues should be added to analyses of normative development outside North America and Europe (Goodnow, 2014).

It is possible that new norms will continue to emerge as people develop hybrid cultures, for example, as young people reinterpret norms about marriage arrangements (Kwak, 2003) or religious practices (Ketner, Buitelaar, & Bosma, 2004). What people regard as the obligations of one generation to another are often reinterpreted (Goodnow & Lawrence, 2013; Lawrence & Goodnow, 2011). Adult children in Japan, for example, have re-interpreted their obligations to provide care for their elderly parents (Izuhara, 2004). That obligation is no longer seen as automatically calling for parents to move into their child's home, although the obligation to provide other forms of care and support remains. In effect, the norm has not changed, only the ways in which it is met.

The processes of enculturation into one's heritage culture do not stop because new demands arise in the course of double culture experiences (Sam & Oppedal, 2003). Elements of novelty may be introduced into the "on-going transformations" that mark the lives of developing persons (Kloep & Hendry, 2011, p. 57), and become catalysts for change (de Haan, 2011). The catalyst may be the demand for new skills and competences (Dodds et al., 2010). It may also be the demand for adjustments or alternatives to existing beliefs, values and practices (e.g., Kwak, 2010; Lawrence et al., 1992). It may, as well, be the stress placed on families that prompts parents to review their expectations of their children's developmental pathways (e.g., Dachyshyn, 2007).

The source of change may also reside in the normative developmental transitions experienced by young people. These often bring new options for developing cultural competence (e.g., going to school, finding a life partner, caring for disabled or elderly parents). They may also close off some traditional experiences such as expectations

of competence that are tied to closeness to the physical environment (Kirmayer et al., 2009), views of intelligence as involving responsibility (Serpell & Jere-Folotiya, 2008), and rituals marking the transition to adult status (Yunkaporta, 2008).

### ***Biculturalism and Bicultural Identity***

The emphasis in studies of acculturation often falls on related stresses and difficulties (e.g., Schwartz et al., 2010). Equally important, and sometimes equated with acculturation, however, is the development of positive ways by which people come to terms with multiple cultural experiences. Among those positive ways, particular attention has been given to the development of biculturalism or a bicultural identity. Most immigrants become bicultural to some degree (Bornstein & Cote, 2006). A bicultural identity is also usually seen as more adaptive and health promoting than alternatives that involve rejection of either one or both cultures (e.g., García Coll & Marks, 2012; Schwartz & Unger, 2010; Yoon et al., 2013). More specifically, it is related to educational advancement in immigrant and refugee young people, especially as they maneuver through different challenges in their social environments (Brooker & Lawrence, 2012; Cooper, 2011).

The positive construction of a bicultural identity involves people's active transactions with two cultures: heritage and mainstream (or national) cultures. In the specifics of their life situations, these transactions involve exploring and making commitments to both (Phinney & Ong, 2007). In Côté's (2006) terms, the construction of a bicultural identity is "a special form of the individualization of the life course" (p. 31). The processes involved are closely tied to the construction of a sense of personal identity. Skandrani, Taïeb, and Moro (2012), for example, asked young women from the Maghreb living in France how they constructed identities as Muslim women in a society often hostile to their cultural practices (e.g., wearing the hijab). Although these young women varied in their religious affiliations and practices, they expressed a reappropriation of their Muslim identity. This novel "hybrid Muslim identity," however, was also tied up with their French identity. As one explained: "Euh, being Muslim and French, that's connected for me. . . . I can even say, that the French part of myself doesn't go without the Muslim one. Both parts live together" (p. 87).

These processes of individualized constructions are marked by open possibilities. One set of possibilities, for example, involves switching back and forth between cultural frames in response to situational demands (Mistry

& Wu, 2010; Oppedal, 2006). Another related possibility is the construction of a blended or hyphenated identity (Bhatia & Ram, 2001). Some young people are able to articulate the blending or hybridization with hyphenated labels for themselves: labels, for example, such as Australian-Sudanese or Australian-Vietnamese. Young people with these different forms of bicultural identity are usually seen as being comfortable with themselves, and at home in both their heritage and mainstream cultures (Lawrence et al., 2012; Schwartz & Unger, 2010). That sense also was associated with less depression and hopelessness than alternative forms of cultural identification in the LaFromboise, Albright and Harris (2010) study of American Indian young people. Bicultural identities gave these indigenous young people more protection against adolescent problems than identities that were mainly either traditional American Indian or mainstream "White."

There is, nevertheless, some evidence contrary to that rosy picture. Identifying with two cultures is not always associated with better mental health. Separatist identities may actually be more protective of young people faced with discrimination and prejudice (e.g., Hernandez, Denton, Macartney, & Blanchard, 2012; Schwartz et al., 2010). The difference again largely depends on a variety of circumstances (historical time, social environment, pressures on people), and on the variety of positions individuals may take in their reactions and opposition (Bisin, Patacchini, Verdier, & Zenou, 2011; Ogbu, 2004; Portes & Rumbaut, 2001).

The contrasting experience to a sense of belonging may be a sense of "cultural homelessness," a sense of not fitting into either cultural context and of not belonging anywhere. That sense of homelessness may start with an awareness of there being other ways of thinking and acting and, for some people, a move out of the heritage cultural context (Lawrence et al., 1992; Valsiner & Lawrence, 1997). The culture one turns to, however, may also feel alien. The end result may then leave people marginalized and in opposition to both (Portes & Rumbaut, 2001).

Cultural homelessness is increasingly being recognized among "third culture kids": children in families that, for reasons that are often occupational, shift from one country to another (Hoersting & Jenkins, 2011). It has also been reported among ethnic repatriates from the former Soviet Union in Finland, Germany, and Israel (Jasinskaja-Lahti, Liebkind, Horenczyk, & Schmitz, 2003). Returning to what ideally should be their cultural home gives rise to a sense of not belonging there, as well as not belonging in the countries from which they came.



Biculturalism, alternatively, can be seen as a continuing developmental experience of coming to feel at home in two cultures. It is constructed in a complex intertwining of cultural frames, situational activities and personal preferences. It is also relational. Changes for one person can have significant effects for other family members. A child's bicultural competence, for example, may bring extra family responsibilities, specifically the role of family or community broker and bridge to the mainstream (Padilla, 2006). In turn, this can add to a young broker's self-esteem and increased standing in the community (Dorner et al., 2008).

### *Questions and Directions*

Overall, this line of analysis extends our understanding of the diversity of cultural contexts and the significance of that diversity in how cultural contexts intertwine with the lives of developing children. Line 4 has brought into sharp relief the diversity that marks out children's worlds as contexts that come into contact and continue to exist in the same space. Within these contested spaces, cultural contexts undergo many changes. Developing children live through those changes in experiences of immigration, repatriation, and minority status in relation to the experiences of normative development. Analyses of change then need to cover changes in each cultural context, regardless of whether it is the dominant, mainstream culture or another. They also need to cover the multiple dimensions of cultural life that can change in the process (e.g., values and practices) and the multiple directions that change may take across and within people's mainstream and heritage cultures.

The central concepts of acculturation and enculturation need to be reexamined in the light of at least 80 years of this line of research. Acculturation processes can no longer be regarded as one-dimensional or one-directional (Schwartz et al., 2010). Neither can they be seen as experienced only by members of immigrant and minority groups nor in uniform ways. Parents and their adolescent children are likely to experience acculturation processes differently, and in different areas of their lives. For the children, pathways through changing patterns of behavior and values will be complex and interwoven with different forms of experience and allegiance (e.g., religion, family values, mainstream behaviors).

Within contested cultural environments, the possibilities that evolve bring new levels and new ranges of skill into the repertoires of children (e.g., digital information-gathering and networking). Children of Latino immigrants in the United States, for instance, aim for previously unknown educational achievements, and their goals become more

attainable as their community embraces the possibilities that open up to them to support their children (e.g., Cooper, 2011). The restrictions imposed either by one's heritage or by the mainstream cultural context also impact on young lives (e.g., Vedder et al., 2006). Misunderstanding, discrimination, prejudice, or fear can hedge young people into situations where they find for themselves alternatives or exit routes out of either or both cultural contexts. They may construct identities that are either flexibly adaptive (Oppedal, 2006) or thoroughly oppositional (Bisin et al., 2011; Portes & Rumbaut, 2001).

Among new directions for research then is the challenge to take up Sam and Oppedal's (2003) call to understand more about how the children of newcomers blend their experiences within their heritage and mainstream cultural contexts. Perhaps more challenging is understanding how any developing person can take up Moghaddam's (2012) imperative that we all should become "omnicultural" and rise above local cultural allegiances to give human similarities priority over cultural differences. Many young people, for instance, create hybrid identities (e.g., Bhatia & Ram, 2001; Lawrence et al., 2012; Skandrani et al., 2012) and hybrid life styles (e.g., Kwak, 2003, 2010).

Developmental processes are intertwined dynamically with the cultural interactions that identify life in particular places. Connections between developing children and each cultural context are likely to have some flow-on effects from the connections that are occurring between cultural contexts. When one cultural context is dominated by another, the opportunities and possibilities for children born and raised in it will be constrained by the boundaries incurred within that heritage cultural context. Even if the children are developing within the dominant cultural context, their opportunities and possibilities will be constrained by changing expectations in a global world where all people are looking for a better place for their children.

These complex, interacting and multidirectional connections demand multidimensional analyses that can account for the various connections between children and their several cultural contexts. We have few models or accounts of how the agency and cultural participation of children and young people reaches beyond the confines of family and school to the wider community and the world. There are indicators, however, of diversity in the areas and directions involved in interactions between acculturating children and their parents. This diversity encourages us to press for analyses of wider networks of connections for children developing with the experience of multiple cultures. A more comprehensive understanding of those

connections and of children's experiences and participations in cultural contexts also must have a flow-on effect on policy-making to assist their development in complex cultural experiences. Line 5 addresses that issue.

### **Line 5: From Theory and Research to Policies and Policy-Making**

This last line of analysis again focuses on shifts and what these contribute to conceptual and procedural issues. We single out two of these shifts. One is a rise of interest in policy that is accompanied by a variety of rationales. The other is a shift toward regarding change-oriented regulations or policies as a form of joint activity that involves several players. Their actions may possibly be collaborative. At the least, each makes some contribution and their actions are inherently interwoven and influence each other.

#### ***The Rise of Interest in Policy***

This changing interest requires little documentation. Its bases, however, call for comment. One proposed base is a general decline in distinctions between what were once called "pure" and "applied" research (e.g., D. A. Phillips & Styfco, 2007). Another is the view that considering change-oriented action is an intrinsic part of all developmental analyses (e.g., Bornstein, 2010; Goodnow, 2008; Jensen, 2011). A third is the view that when children are disadvantaged, a concern with change-oriented action is a moral imperative (e.g., Gouveia, 2010): one coupled with obligations for respect and for avoiding any further harm to vulnerable people (Lawrence et al., 2013). The state's interests are a fourth. Change-oriented actions are often seen, or presented, as having investment value. They make it more likely that people will be competent, in good physical and mental health, at home in the context in which they live and, over time, will contribute to the health and wealth of the nation and to the shaping of social policies (e.g., Shonkoff & Phillips, 2000).

Not all policies, however, have positive outcomes, prompting a fifth base for a closer look. School systems provide an example. Curricula or organizational schemes may be imported without change from Western countries and middle-class districts. For those imports to be effective, there needs to be a reasonable fit with the daily lives, learning styles, and goals of the cultural community (e.g., for Zambia, Serpell, 2011; for Western Samoa, Watson-Gegeo, 1992). A good fit, however, may not even be part of the original planning for new imports. The reasons for the importation then become matters for concern and research.

### ***Policy-Making Is a Joint Activity***

It is easy to compare cultural contexts in terms of their current or past policies and regulations. Those comparisons, however, tell us little about how policies are shaped, responded to, implemented, changed, or discarded. Without attention to those dynamics, it is argued, policy-making for change is not likely to be understood or to be effective (e.g., Shonkoff & Bales, 2011; Shonkoff & Phillips, 2000). How analyses of those dynamics might proceed is far from clear. One major step forward lies in regarding policy-making as an activity that always involves two or more players. In this sense, it is a joint, rather than solo activity, prompting once more questions about who are the players, what each contributes, when and where they agree, and how they deal with points of difference.

As a first example, we take a study by Beckert (2008) on parliamentary debates that preceded the establishment of laws specifying what children should inherit in Germany, France, and the United States. Currently, whether children must receive a direct share, and how assets are distributed among them, largely are matters of a parent's choice in some countries. Arrangements are largely prescribed by law in other countries (e.g., equal division among a spouse and children, or among children, or both). How such differences evolve is an area where concepts and methods are still largely uncharted. Beckert's (2008) unusual step was to use archival data on parliamentary debates leading to the passing of laws. Three principles were mentioned: the rights of individuals, the protection of children, and the protection of spouses. Priorities and relative weights, however, varied by country. Within the United States, the principle of the rights of individuals was emphasized. Individuals should have the right to decide whether family members would receive any assets and, if so, who would receive various shares. Protection of children and spouses were qualifications related to circumstances such as their needs as dependents, or the motives of the bequest-maker. In contrast, French and German debates gave priorities to protection of family members or to equity in distributions. The rights of individuals would then be respected by some qualifications, for example, the right of bequest-makers to make their own decisions but only for a specified small proportion of assets. In each system, nevertheless, people find ways around restrictions or negotiate departures (Goodnow & Lawrence, 2013, provide examples).

Inheritance laws may seem remote from analyses of opportunities or resources for development. We do not think that is the case. The same kind of approach could

well be used for the analysis of other regulations or policies related to children. Shonkoff and Phillips (2000) provide an example, again considered in terms of joint activity. For policy-making, they saw two parties as the minimum cast. On the one hand were researchers. On the other were the politicians or bureaucrats who make decisions about funding. These two parties would often negotiate over the management of a trial. Shonkoff and Bales' (2011) Strategic Frame Analysis added other parties to the cast. "Concerned citizens" and "communication specialists" now enter the picture, with a closer specification of what and when each person should contribute. The advocated sequence starts with interviewing concerned citizens to identify their ways of thinking about the chosen issue. Communication specialists come next with the task of translating the citizens' concerns into a simplified but shared story. This story is then tried out with politicians, exploring whether they regard it as likely to be told easily, to be understood and approved by voters. Only by using this talkback chain in a collaborative process, it is argued, are effective and acceptable policies likely to emerge. Questions still remain, we believe, about the choice of concerned citizens and the extent to which they are involved both in the planning phase and in later evaluation of the story that is developed. At the least, however, all players have some role in the development of a shared story or a common view of what is happening, what needs to be done, and what can be done.

A different approach comes from the United Kingdom. Again the goal was to broaden the decision-making group, seeking especially the involvement of people beyond researcher/practitioner or politician/bureaucrat groups. Particularly relevant to analyses of development was the mandatory inclusion of children in the process of developing, implementing, and evaluating research and policies that impacted on their lives. Government departments were required to have action plans for including children and young people in decision-making. Other groups were funded in ways designed to ensure their compliance.

One immediate outcome was an increased interest in children's involvement. "Children and young people's participation has never been such a popular demand" (Tisdall & Davis, 2004, p. 131). Not surprisingly, reservations and questions also arose (Tisdall, 2008). Young people saw some invitations to participate more as tokens than genuine interest or willingness to alter existing ways of decision-making or to ensure truly representative participation in decision processes (Hartas, 2011). Tisdall (2008) observed that "the broad umbrella of children's

participation" may need to be replaced by more "nuanced terms" (pp. 27, 28). Over several decades, however, the legislative move has certainly brought greater attention to children's views.

It is tempting to see the two approaches (U.K. and U.S.) as representative of each country's general style. The U.S. style might be seen as a marketplace approach. Policies are not put in place until the market—politicians and public—has been sold on them. The U.K. style might be seen as involving government intervention at an earlier point, with reservations left to arise and be dealt with at a later time. That kind of inference, however, would ignore what we have learned so far about avoiding dichotomies. A dichotomy, in this case, would identify one cultural context as exclusively market driven and the other as exclusively legislation driven. Both styles are likely to be present in all cultural contexts. Where differences occur is in the situations to which each style applies. Australia again provides an example. It is legally compulsory to provide, in all road vehicles, special forms of protective seating for young children. Older children, like adults, must wear seat belts. In contrast, parents can choose whether children should be immunized or not. Most parents do so (around 85%–90%), but concern is now arising about the percentage that does not, with potentially wide adverse effects. A law-driven approach clearly is not always taken, raising questions about when and why this occurs. Questions also arise about the place in these joint activities of two further players. One consists of the people who are meant to implement any policy and are potentially given various degrees of support by the other players. The other consists of the players expected to evaluate the effects of any policy. Who chooses these evaluators? Are they the same people who developed the program in the first place? Are they seen as disrupting a worker/client relationship that is already tenuous? More significantly we may ask, following the English experience, what is the most appropriate form of participation in policy-making for children?

### *Questions and Directions*

In the course of considering the lines of analysis, we have asked several times how various concepts and perspectives might be translated into the choice of methods and measures. That same question applies to views of policy-making as a joint activity. Clearly we need to promote awareness of the appropriate rights and responsibilities of each player in the collaborative process. One way of doing so consists of watching what happens in the course of meetings. To be watched, in particular, are

advisory boards for research or intervention projects that involve two or more members from different cultural groups or different vested interests. Another is to promote collaborative activities in any research project where the initial research group has one cultural background but the project's working group and target group come from another.

We have not found available and useful records of how this joint activity proceeds or is expected to proceed. One way forward, however, is illustrated by a meeting called by the U.S. National Research Council (NRC, 2008). The NRC's official policy is one of international collaboration on projects where there are differences in cultural background among the researcher planners, the research staff on the ground, and the target group. The NRC brought together researchers from several countries and asked them to comment on how collaboration had worked out for them. A variety of issues emerged. These ranged from definitions of childhood, to control over the choice of staff or sample, the interpretation or ownership of data, and the identification of what counted as a common cultural background. It is a mistake that breeds resentment, for example, to homogenize groups that regard themselves as distinct. Lumping together groups such as North and South Sudanese, or a variety of groups as "Asian" (Thorne, 2005) is a poor beginning. Policy decisions from which target groups are excluded appear to be more strongly resented (Goodnow, 2008). In effect, some translation from concepts of policy-making into research methods and measures is possible. We have some distance to go, however, before we can see more clearly how to proceed. One way to do so involves focusing less exclusively on the content of a policy—the end product—and more on the players involved, what each contributes, and what each sees as the rights and responsibilities of others and of themselves.

## IMPLICATIONS AND FURTHER DIRECTIONS

In the previous two sections, we considered the nature of conceptual frames and of frames combined with specific research topics and approaches. As we proceeded, we drew out several implications for changes in concepts and in research studies. We now draw these together. The central concern remains one of moving beyond separations: separations between contexts and development, among contexts, and among aspects of development. Cutting across a variety of analyses and studies, however, are

several recurring proposals. The first is related to contexts and development: change in either one has flow-on effects for the other. The second takes the form: individuals are never solo. Activities are always joint, even though the forms of joint may vary. The third takes the form: skills and capacities always have a cultural meaning. In effect, aspects of development that are often treated separately and regarded as distinct—as cognitive and social, for instance—need always to be considered as interrelated. The fourth takes the form: Measures, methods, and interpretations need always to be reconsidered for their cultural meanings. All four are expressions of the general view that cultural contexts and developing children cannot be disassociated from each other.

### **Contexts and Development: Change in Either Has Flow-On Effects for the Other**

It is easy to recognize that changes in development alter contexts for children. When children reach puberty, for instance, changes occur in opportunities, obligations, and relationships with parents. Less clear are the ways in which views of contexts and views of development are related. To bring these out, we consider four changes in views of contexts and the changes that follow in views of development.

#### ***Cultural Contexts as Fluid, Marked by Change and Continuity***

Analyses of cultural contexts have often emphasized continuity in ways of thinking and acting, and people as actively working to pass on these ways from one generation to another. Only individuals are seen as changing. Moves away from this one-dimensional view place more emphasis on contexts as fluid. They also see change and continuity as interrelated. A focus only on change or only on continuity is a return to the dichotomies we are trying to avoid. For views of development, the interesting questions then relate to the extent to which continuity or change are anticipated, are seen as risks or opportunities, and give rise to particular strategies.

#### ***Cultural Contexts as Marked by Diversity and Competition***

In one-dimensional views of cultural contexts, ways of thinking and acting are bundled together under a single descriptor, and that descriptor is used to characterize a context as, for example, collectivistic or individualistic, as embracing interdependence or autonomy. Any ongoing



dialogues and debates already happening within the cultural context are ignored. In moves away from this position, Strauss (1992) advocated dropping these bundling terms altogether, and Kağıtçıbaşı (1994) argued against treating collectivism and individualism as extreme ends of a single scale. More moderately, Kağıtçıbaşı (2012) and Raeff (2006) both argued that all cultures value both interdependence and autonomy. All cultures display some evidence of both collectivism and individualism. They vary, however, in the situations where people are expected to adopt one orientation rather than the other. In any cultural context then, development does not consist only of becoming more independent or more interdependent. Instead it has to do with how people constantly test for the appropriateness of some general alternatives. People may often say, "You can never stand in the same river twice." They may maintain, however, some default ways of categorizing or grouping rivers. When in doubt, they may use those groupings to identify new situations by recognizing "this is like that". The interesting questions then have to do with the ways in which people test alternatives and the ways in which they move toward any generalizations across situations. People clearly do not go through life regarding every situation as unique. How children or adults come to develop and use differentiations and groupings of situations, however, are topics calling for further exploration.

#### ***Cultural Contexts Are Marked as Directive and Demanding***

In line after line of analysis, contexts emerge as presenting tasks and expected orientations to children and adults. These are not simply about what *can* be done, but also what *should* be done, together with evaluative judgments about what is completely unacceptable, and whether people fail to act as they should because of ignorance or deviance (Shweder et al., 2006). Cultural contexts, nevertheless, do allow some loopholes where members can apply distinctive strategies: ways to avoid complete compliance with what is conventionally proposed as what they should do. People may acceptably fudge their performance so that it looks closer to the directives (Wikan, 1982). They may push out the boundaries, constraining back on constraining norms (Valsiner & Lawrence, 1997). Development then needs to be seen in terms of coming to accept directives and also to avoid or minimize compliance. It needs also to include questions about how children respond to competing demands. Faced with the demands of adapting to a mainstream cultural context, for instance, young immigrants may focus their major efforts on their own normative

developmental needs rather than on the expectations of either heritage or mainstream cultures.

#### ***Cultural Contexts Are Marked as the Core of Experience***

Cultural contexts have sometimes been placed only on the remote (distal) outer edges of influences that make a difference to development, and as having only indirect effects on the proximal contexts. Placing them at the core calls then for a change not only in views of contexts but also in views of development. Development may need to be seen, for example, as the acquisition of general orientations that are reworked when changes in contexts occur. Kwak (2010), for example, described her move from Korea to Canada as shifting from a "we" world to an "I" world. The core concern remained one of relationships to other people but now she needed to make a distinction about when and how often the emphasis should fall on "we" or on "I." That we/I distinction, however, may not always suggest there is a need to change one's own view of the world. Pattel (2007) provides an example. In her description of Australian Aboriginal views of their world, culture is always central. When Aboriginal people describe circumstances or events, they do not simply refer to themselves as being present and involved. It is always the collective "we": the kin or others who are intimately connected to the person speaking. In effect, culture is carried as an intrinsic part of their ways of thinking and acting. People who hold Western hierarchical views of contexts, Pattel (2007) argues, are then unable to understand the holistic, integrated structure of the Aboriginal universe.

#### ***Development: Culturally Valued Knowledge and a Sense of Belonging***

From the five lines of analysis emerge not only a sharpened sense of how views of context are related to views of development, but also a sense of the productive directions that analyses of concepts and research are beginning to take or might take. Among these possible directions, we take for granted the significance and appeal of considering children as active agents from an early age, and the significance of exploring the strategies that children and adults use in various situations. We focus here on one direction that offers a sharp contrast to the more usual emphasis on development as increasing skills and capacity, instead focusing on the development of both culturally valued knowledge and a sense of belonging.

Competence and belonging aspects of development have several features in common. Both involve more than

once-off changes. They are instead lifelong processes where norms and practices change with people's relationships and roles. Both involve negotiating departures from what other people regard as the norm. For both also, children are active participants rather than passive receptacles into which cultural practices, meanings and values can be poured. Children interpret and either accept or reject what the cultural context holds out for them and expects of them (Shweder et al., 2006). Their initiatives and responses together with their growing competences then hold out new possible directions of change for the cultural context.

### ***Highlighting Aspects of Cultural Competence***

We single out three aspects: participating in joint activities, negotiating in situations where one's own expectations differ from those of others, and navigating pathways from one place or social situation to another. For each of those aspects of proficiency, we need to ask: What gives rise to some proficiencies being valued more highly than others? Value may come, for instance, from relevance to survival (e.g., coming to distinguish between safe and unsafe areas) or from relevance to ways of fitting in (e.g., learning how to speak to various others). For each also, it is not only the skills that matter, but also the meanings attached to them (e.g., their being regarded as significant or trivial; D'Andrade, 1981). Cultural contexts may vary in what they regard as significant, but they all expect their children to acquire what is distinctive of their cultural life. How cultural meanings become attached to specific competences is a question warranting further research. So also are questions about the strategies people employ when departures from the culturally significant occur. A high school student, for example, announces that as a college major he will concentrate on Celtic Studies and that he will now drop most of the subjects that could lead in other directions. That area of knowledge is of some interest to historians and archeologists. It is not, however, an area that most people would regard as significant or that is likely to lead easily to any paid work in the United States. What then, if anything, do parents do and what prompts their choice of strategies for their interactions with their children?

*Participation in joint activities* is a part of any context. Children and newcomers need to learn how to participate in activities that involve other people. Participation is expected of them and sought by them. Learning how to participate, however, is not a single skill. One aspect consists of competence in calling on the "social convoy"

(Antonucci & Jackson, 2007), choosing and enlisting people who will make the task easier and safer. Another has to do with differences among forms of participation. Competence when people work together on the same task in face-to-face communication can be quite different from competence when they are physically separated from one another but are expected to reliably contribute and in the process, to deserve other people's trust. Children who are given a small part of harvesting work, for example, or are asked to deliver a message, are participating even though other people are not constantly at their side. That kind of participation has mostly been investigated in adults. Its extension to children, however, offers a way of exploring the development of reliability in children's participation and the development of parents' trust. Of interest also are questions about when the development of reliability in participation is a particular goal for parents. It may well be a major goal, for example, when children's maturity or intelligence is defined in terms of social responsibility as well as their capacity to solve problems by themselves or to act appropriately when they work side-by-side with others (Serpell, 2011; Serpell & Jere-Folotiya, 2008).

Understanding participatory rules is a further part of becoming competent in joint activities, along with being willing to participate within the parameters of those rules. Being an effective contributor to conversation, for instance, calls not only for the ability to express oneself in language, but also for the shared understanding of rules about when each person should speak, for how long, and what they should or should not say (H. H. Clark, 1996). Learning these kinds of rules is expected of children in relation to all activities. How they come to distinguish between major and minor departures from the rules is an issue whose investigation would add considerably to our understanding of development in all participation activities.

Differences need to be *negotiated* in acceptable ways. What happens when children find the tasks presented not to their liking, or when others hold different or even negative views of them or their skills? They wish to avoid rebukes, further pressures to comply, or negative assessments. At the same time, they wish to achieve their own objectives. Like adults, children seek out strategies that will allow them to operate with "acceptable ignorance, negotiable disagreement" (Goodnow, 1996, p. 345). What does the development of those strategies involve, and what do we already know about them? We know, for instance that children become proficient in searching out the weak points of adult authority and the loopholes to try. Even very young children learn shortcuts that subvert ordered

procedures (Flynn, 2008). They quickly develop specific strategies for bargaining and for resisting adult directives (e.g., Kuczynski & Hildebrandt, 1997). They seem as well to learn quickly when negotiation is not likely to be productive. When a child volunteers to take on a task but after completing it suggests that it warrants a money reward, for example, the child is likely to find that way of proceeding is “just not on” for most parents. Children rarely repeat such suggestions (Goodnow, 2004). We still have a great deal to learn about the development of negotiating skills. We know that children may take the lead and structure the negotiation process, and that parents respond to their initiatives in a variety of ways. We know little, however, about how parents signal in advance whether a particular matter is negotiable or nonnegotiable, or when they praise or rebuke a child for moving into negotiation mode.

*Pathways* within and between social situations may be geographic or social and educational. From one kind of path to another, there may well be differences in the skills needed to recognize or follow them. Some geographic paths, for example, seem to be so well worn by previous generations that children recognize and use them at an early age (e.g., safe places to play). That may or may not be the case when it comes to social or educational paths. Some children may become expert at navigating through the multiple worlds that cultural contexts offer (Cooper, 2011; Mistry & Wu, 2010). They may also become adept at taking advantage of the social institutions that can guide progress through life (Hedegaard, 2009). In the best of circumstances, however, all children and young people quickly come to recognize the value of some paths and the destructive nature of others. They learn, for instance, that they need to weigh the opportunities and risks involved when deciding to join or to leave certain strictly defined gangs and groups (Lightfoot, 1997).

Questions to ask then become: When do children find navigating difficult? What happens after they experience difficult pathways? Children and young people entering a new cultural context, for instance, may find moving between its distinctive social situations especially difficult. They need to do more than just drift in and out of new situations. They need to find ways that allow them to explore and to make choices and commitments that give them a place and some social standing in those situations (Bhatia & Ram, 2001; Phinney & Ong, 2007). In Oppedal’s (2006) terms, immigrant children find places for themselves by learning how to switch cultural codes just as they switch language codes. Switching cultural codes allows them to take part in the activities of the situations in which they

find themselves. They can, for instance, follow the heroes of the local football team with their peers and observe their family’s religious rituals at the church or mosque, and do both using different concepts and gestures.

Becoming competent at code switching, however, is not simple. One source of complexity is that children need to anticipate how their switching, if observed, will change how other people see them. Children also need to develop skills for estimating what others will regard as the worst possible errors. For adults, that kind of question is implied in Fiske’s (1991) analysis of relationship errors. Among children, it is part of learning what have been called “boundary disturbances”: actions that are close to or beyond the limits of acceptability (Bascoe, Davies, & Cummings, 2012). Children’s recognition of the worst errors to make (and their opposites, the best ways to act) offer ways of exploring how they come to recognize the most useful paths to follow. Once again, however, it is not only the level of competence that matters, but also the ways in which that competence is displayed and the inferences that others draw from the display.

### ***Highlighting Aspects of Cultural Identity and Belonging***

Throughout we have emphasized the close relationship between the development of cultural competence and the development of a sense of belonging in the cultural context. That sense of belonging has a personal orientation that is part of a sense of self, a constructed cultural identity. Like the personal identity of which it is a part, it is not easily or quickly attained, and the processes involved in its construction continue throughout the whole of life (Schwartz & Unger, 2010). It does not automatically come with one’s cultural heritage. The construction also is not the work of only one person. Instead, parents, other adults, and other children are all active in contributing to the thoughts, feelings, and activities that give a young person a sense of belonging to a cultural context. In terms of life periods, identity formation is predominantly seen as occurring in adolescence and young adulthood, with the sense that from this time, people review their initial formations (Côté, 2006; Marcia et al., 1993). The processes begin, however, in feelings of personal distinctiveness and affinity—of wanting to be able to say, “I am like you”—as Over and Carpenter (2012) found in young children’s imitative behaviors. Later reconstructions may occur not only with changes in age but also in the course of experience with others: experience, for instance, with people who are felt to be different and who confirm or deny a person’s own sense of identity (Gjerde, 2004).

Cultural identity is not one-dimensional. Among children and young people of the 21st century, the sense of self will increasingly have referents in more than one way of thinking and acting. The cultural identities they claim for themselves are increasingly likely to be bicultural, hyphenated (e.g., Malaysian-Chinese), or hybrid (e.g., being both Muslim and French; Skandrani et al., 2012). They may alternatively involve active rejection of any assigned or national identity (Bisin et al., 2011). Even that rejection, however, displays awareness of more than one possibility and of one's own cultural distinctiveness. People are able to assert their distinctiveness in detailed ways, it turns out, covering both geographical and generational differences (Verkuyten, 2004).

Cultural identity is also not restricted to what people construct for themselves. It has to do with the identity they present to others. Those two aspects of cultural identity may be quite different from one another (Ogbu, 2004). The experience of a Chinese student in the United States provides an example (Hsieh, 2006). We single it out because it involves both the recognition of a cultural difference in assessment and a personal response to that assessment. In the United States, she encountered a totally new view of her character and ability. In Hong Kong, she had been recognized as competent and smart. Her new classmates, however, considered her "stupid and weird" (Hsieh, 2006, p. 8) because she did not speak up in class. Her instructors also interpreted her silence as incompetence. With the realization that her silence was the problem, she changed her behavior in class to shore up her identity as intelligent and competent: a strategy that she herself fortunately recognized as needed in the new environment.

Negotiating cultural identity is most often considered in terms of people moving from one cultural background or one country to another. It can also occur, however, within people who see themselves as having maintained a cultural identity, and expect others to see them in that light. Young people who reenter their home culture after living abroad may have to renegotiate acceptance and belonging (Hoersting & Jenkins, 2011). Ethnic repatriates returning after longer absences often encounter the need for still more negotiation of identity. They come back to a cultural context that they think will be the same as when they or a previous generation left it. They may have assumed that they would be recognized as belonging, but find they are effectively regarded as strangers (Jasinskaja-Lahti et al., 2003). Unless they can negotiate some form of hybrid or blended identity acceptable to themselves and to others, they may find themselves culturally homeless or, in the

words of one Somali refugee after 20 years in Australia, "emotionally stateless."

Navigating a way through identity-assailing situations often involves carrying possessions from the past, not only in physical terms, but also in terms of core values. Moving successfully between mainstream school and heritage home, for example, involves choosing which values and practices are core to one's sense of self and cannot be easily set aside, and which mainstream values and practices can be taken up into one's new self-descriptions (Dodds et al., 2010). Immigrant young people seem to encounter particular navigational difficulties when their self-perceptions are out of step with how their parents see them (Telzer, 2010).

The navigational strategies of young immigrants also may be complicated by the need to find paths for others as well as for themselves: a further example of exploring occasions and sources of a sense of difficulty, ease, or satisfaction with the transition. Many immigrant young people, for example, need to be pathfinders in knowing how to present their own carefully constructed identities as people who now belong in the community. Their self-presentations may take on extra dimensions when they also need to act as pathfinders and cultural brokers for their parents (Padilla, 2006), with the responsibility of introducing their parents into and guiding them through puzzling mainstream situations (e.g., meetings with teachers or government representatives).

Overall, it is not possible to analyze the intertwining of cultural contexts and developing children without seeing children as active, sentient agents. That impossibility applies both to the development of competence in the knowledge and skills required for life in relation to the cultural context, and to the construction of a cultural identity that connects them to the cultural context and is an acceptable definition of self that others can also accept. This active role may take several forms. Children, for example, interpret what adults say, responding with agreement or disagreement (Grusec, Goodnow, & Kuczynski, 2000). Children may also take a leading role. They may, for instance, choose their own models to follow when seeking to gain specialized skills (e.g., Henrich & Broesch, 2011). Even at a young age, they may take an evaluative, critical view of what they observe or are told of the cultural rules they are expected to follow, and of what they are expected to become (e.g., Lawrence et al., 1992).

We noted earlier several studies exploring that kind of agentic action at an early age, asking whether and when children imitate or pass on all or only part of what they see a model do (Flynn, 2008; Over & Carpenter, 2012).



We also explored the choices children make when they are presented with conflicting advice from two sources and then are asked which advice they will follow (Harris & Cariveau, 2011). To those, we now add a set of studies by B. Phillips, Seston, and Keleman (2012). In these, children from 2.5 to 3.5 years old, under minimal sighting conditions and without any overt modeling, noticed which of two relatively similar tools tried by an adult effectively turned on a bell (conditions that the researchers labeled as “eavesdropping”). Even under these restricted conditions, children remembered over the course of the following days the tool that worked and could serve other functions (e.g., crush a cracker). The results were seen as “underpinning children’s striking accomplishments as cultural learners” (B. Phillips et al., 2012, p. 2071).

### **Measures, Methods, Interpretations: Reconsidered for Cultural Meanings**

Most research involves judgments or assessments of what is observed or experienced. Those judgments may be about individual people, groups of people, or about relationships. When judgments need to be made about people from other cultural backgrounds, the easiest and most reasonable solution may seem to be the use of measures that work well in one’s own cultural context. The assumption is that care needs to be taken in translating from one language to another, but that taking care should be enough. This parachuting, however, is in error on several grounds. One is that parachuting procedures are based on tacit assumptions about what is reasonable: what questions one may reasonably ask; the people of whom one may reasonably ask them; the people one would reasonably expect to answer; and the settings and tools that one may reasonably use to elicit their answers. Another ground is that the assumption of any culture-free task or question is almost always an illusion. The most likely outcome will be an assessment of children in other cultures as “doing less well” or of parents as strangely underprotective or overprotective. A third ground especially relevant to children, is that judgments—in research, in courts, and in everyday life—are based on views of developmental sequences and timetables related to chronological age. In other cultural contexts, however, there may not be any record of birth. Even when a record once existed, chronological age may not be a matter of concern, or may be better left ambiguous in dealings with authorities.

The challenge then is to explore the bases to assessment errors and to find ways of avoiding them. The main basis

to error is thinking that what we see most people do in our own cultural context is normal or right. The alternatives to parachuting currently being explored are varied. One is that we take measures from the nature of people’s daily lives. Another is to ask people from other cultural backgrounds to make judgments about our cultural practices and values: judgments, for example, about styles of parenting or what may be seen as healthy or unhealthy intergenerational interactions. There are still relatively few studies using this useful reverse approach. A third is to ask people what they find surprising, difficult, or reassuring. Explored, for instance, may be parents’ views of when they think relationships are “going well” or “could be better,” and when they feel they and their children are concerned with the same issue or activity even when they take different views: an approach currently being explored by Stone et al. (2012).

Analyses of contexts and of children often focus on changes over time. Prompted then is a series of questions. These start with a question about the time intervals being considered. Are these over historical periods, over generations, or from one time to another in an individual’s life? Are the same questions relevant to each of these time frames? Likely to be asked next is a question about what changes with time. Are there, for instance, changes over time in contexts, in individuals, or in their interconnections? Does a change in one, for instance, promote a change in the other, and does that, in turn, promote a further change? That pattern could be continued in cyclical fashion, with perhaps special attention to cyclical or cascading patterns within families. Why are effects often selective, even within families? That question as we have seen in the five lines of analysis, has attracted particular attention and is still not answered. Is change seen, for example, as a new risk, a new opportunity, or a mixture of both? Who perceives change in these ways or is there agreement by all? What happens when there is not agreement—when parents and young people, for instance, do not have the same views of changing life circumstances (e.g., of safe or unsafe places)?

Connections over time between contexts and development clearly take many forms and are still far from being fully explored. To take them further calls for a selection of changes to consider and a rationale for why we choose some rather than others. Changes in information technology, for instance, offer some particular opportunities. In Cole’s (2013) terms, there also has now been a change in conceptual tool kits, raising questions about who has access to a particular tool kit, who uses it, and for what

purpose? Here also is an opportunity to regard these tool kits as not always coming from past generations and for recognizing that information about the use of tools does not always flow from adults to children. They often flow from children to parents or teachers. Here then is a form of generational reversals that may take a different form from what is usually considered and that may alter our interpretation of what reversals involve. How in fact do parents and teachers respond to their children being the providers of information, in practice becoming cultural brokers?

## SUMMARY

We started from the view that development is always development in context. We have focused on contexts of the kind usually referred to as *cultural*. To the analysis of cultural contexts, we have added observations and proposals from other contexts, primarily family contexts.

We started also from the view that changes—changes made or still needed—reflect the need to move beyond two limitations in many analyses. One is the occurrence of splits that, as Overton (2010, 2013) emphasized, limit any analysis of contexts and development. These may be splits between contexts and development, among particular pairs of contexts, or among different aspects of development. The other limitation is the occurrence of views that are essentially one-sided or one-eyed. The emphasis falls then on contexts or development as unidimensional. It falls also on connections between contexts and development as unidirectional, primarily in the form of contexts influencing or shaping development, and as fixed in time. A particular direction of influence, for example, is observed at one time and then not followed by observations at later points or by questions about the forms that change may take or the circumstances in which they arise.

Those comments on limitations and changes point to the directional approach we have taken throughout the chapter. The starting points and shifts have led to further directions that are beginning to occur or might now be productive. To bring out the nature of those directional steps, we turned first to an analysis of conceptual frames and then to lines of analysis that combine conceptual frames with specific research studies or research approaches. Frames and research studies we see as always interrelated. Conceptual frames, however, are usually intended to apply to a variety of content areas. The lines of analysis focus on specific content areas, often turning to these as ways of testing the

validity or the limits to some particular proposals about the general nature of development.

We identified four conceptual frames. The first of these had to do with the meanings of the terms *culture* and *cultural*. Issues of meanings have prompted debates about whether to continue using the term *culture* at all. They have also led to proposals to use it—and the less debated term *cultural*—only for ways of thinking, acting, or feeling that are widely shared, have lasted for some time, and are held with some degree of commitment or some sense of links to a sense of identity (some sense of what distinguishes “us” from “others”). With those debates in mind, we have chosen in this chapter to use one term *cultural* and to combine it with the term *contexts* (the plural as a recognition that people usually encounter more than one).

With that basic frame settled, we turned next to frames that start from an emphasis on splits, dichotomies, and fundamentalist steps (steps that regard one side of the divide as the more “real” or “basic” and then reduce or explain away everything else by reference to what is “real”). Needed, we pointed out, are not only alternatives to those divides but also questions about why they continue to be used after many objections. For those questions, we have turned especially to analyses by Overton (2010) and to his view of all these steps as part of a “divide and conquer strategy.”

The remaining frames have to do with the relative position of cultural contexts. In one of these, position is considered in terms of levels of influence. The restrictive starting view has been one of allocating cultural contexts a low position. They have been seen, for example, as influencing child development only by influencing parents or other immediate caregivers. The shifts we emphasize give cultural contexts a central place in any collection of influences, and regard them as early rather than late parts of children’s experiences. In contrast, when it comes to directions of influence in the fourth frame, cultural contexts have often been seen as far stronger than the influence of children on contexts. The shifts then have to do with closer attention to the ways in which children influence contexts and, in a major move away from interactions in the form of control, the ways in which they make sense of and make use of what they observe.

We turned next to lines of analysis that combine questions about frames with specific research topics and approaches. Each issue was set out as a shift. The first of these was a shift from similarities being regarded as a sign of nativist universals to an emphasis on both similarities and differences as based on the kinds of demands and the

kinds of helpful experiences that children encounter. The research questions prompted then have to do with what is expected of children, what they experience, and the resources they can draw on. Prompted also is a recognition of the need for care in selecting groups to compare and measures for assessing development (measures that are often parachuted in from the researcher's own context) and the need to avoid further forms of cultural bias. Differences from what we regard as normal, for example, have a long history of being interpreted as deficits.

To that starting point, we added moves toward analyses that provide not only ways of describing particular contexts but also ways of comparing contexts, combining them, and specifying the nature of transitions from one context to another. We proposed descriptors focused on the nature of places, of activities, and of people: dimensions often considered in combination. For place, we noted the need to consider not only social settings but also physical settings. These are often neglected in current psychological analyses. From them, however, stem questions about demands and resources, constraints and opportunities and, at an early age, the first learning of what is expected. For activities and participation in them, researchers can then draw on a variety of psychological and anthropological analyses. We drew out from these the need to consider development not only in terms of forms of collaborative activity, but also in terms of children learning about participatory rules and of minor or major departures from those rules. We drew out also the significance of children's nonparticipation and how other people may respond to the several forms that their nonparticipation may take. For the parts that people play, we considered their number, the extent to which they are willing or reluctant helpers, their presence in body or in mind (e.g., as audiences or judges), and—an aspect especially warranting increased exploration—their relationships to each other and to the developing child. Overall, the emerging message is that all forms of competence need to be considered not only in terms of skill but also in terms of personal and social meanings and significance.

What more needs to be brought out? Contexts, we emphasize, can never be described as one-dimensional. They are fluid, marked by change. They are also often marked by continuity. One of those features may be more marked than the other (we emphasize their fluidity), but both need to be included in any analysis. We need to consider the meanings that people give to change or continuity, and the strategies people use when they need to cope with change that is unexpected or difficult (even the expected and largely unavoidable transition to school). Again, the

need is to consider both diversity and uniformity and to ask when one is more the case than the other. Immigrant children and young people, for example, have to manage changes to some deep-seated practices and expectations as they live through the continuing meetings and possible clashes between their heritage cultural context and a new, mainstream and dominant one. Often it is the young members of a family who bear the burden of adjusting to the old and the new at the same time. With Oppedal (2006), we have suggested that the cultural switching of immigrant and minority young people is a feature of developmental adaptation warranting further attention.

The final division in our analysis of changing views of contexts is perhaps unexpected. We have sought throughout to extend analyses of cultural contexts to other contexts and to several aspects of development. Unexpected, however, may be an extension to analyses of policies and approaches to intervention. These also need to be considered in more than one-dimensional, one-directional, or once-off terms. Interventions by way of law—declaring some ways of acting illegal, for example—may have little effect on actions that are based on more than legal considerations or have little effect on people who see laws as always ignorable or flexible. We would, however, shift the emphasis to a less explored area: to the activities involved in making policy and law rather than to only their final products. Those procedural aspects of policy or law may again be regarded as a form of collaboration or competition, involving variations in the people concerned, their views of what is needed or possible, and their relationships to one another.

All told, what would we choose as areas or perspectives highlighted by analyses of cultural contexts and as appealing for further research directions? For those choices, we return to our recurring proposals. The first of these is certainly the need to ask how contexts and development are always interconnected, in terms other than how much influence one has on the other. With that recognition come research questions about the nature of change: about what changes, the ease with which it occurs, and who changes, when and why.

The second recurring proposal has to do with a further form of interconnection: Individuals are never solo, self and others are always together. Research questions follow from the nature of joint activities and participation in them. These questions cover the understanding of participation rules, the nature and significance of nonparticipation, and the strategies children use when they wish to avoid expected ways of thinking or acting. Research questions also flow about the use of collaborative activity as a way of describing how

policies that affect the lives of children come to be made and implemented.

The third recurring proposal has to do with an extension in the nature of what development covers and, again, the need to avoid unproductive and arbitrary divisions. We need to start, for instance, with recognizing that development covers both culturally valued knowledge and a sense of belonging, with research questions about the social meanings and the significance that people attach to various kinds and levels of skill. More broadly, the cultural and the social can never be separated from the skills with which people think or act and those in turn can never be separated from what is interpersonal or from what is social and cultural. Just as the development of children cannot be separated from cultural contexts, changes in cultural contexts are always intertwined with changes in developing children.

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## CHAPTER 20

# Children in History

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### OVERVIEW

The foundation for the historical exploration of childhood and children, and for paying attention to historical research in the area, centers on the recognition that conditions for children can and do change, often quite substantially. This point must not be overdone: Elements of childhood reflect biological or psychological continuities, and any effort to portray current childhood as entirely different from the past would be a gross exaggeration. But change is quite real. Historical research can highlight how children in various past periods differed from each other, and from their contemporary counterparts, and it can seek to explain why key changes have occurred. Applied explicitly to the most contemporary historical period, historical research can also explore more specifically how present conditions and features of childhood have emerged, for some truly fundamental shifts in children's roles and expectations are quite recent.

This chapter first more fully defines the basic purposes of a history of childhood, including complexities such as the obvious fact that key historical trends interact with regional conditions to create a variety of specific patterns of change. The chapter then turns to discuss several distinctive challenges in historical work on children—some

of them, like the nature of evidence, involving enduring issues, others, like the geographic imbalance of existing research, highlighting what is hopefully a more current limitation that is being corrected.

Historians are obviously not the only disciplinary group situating children in time and place (Overton, 2010). But historians do have particular responsibility for exploring aspects of children's lives in particular past periods and then linking resultant studies to a wider sense of patterns of change. In some cases, as this chapter suggests, the effort to capture change has reflected larger conceptual frameworks, for example as in emphasizing the impact of modern structures such as urbanization and the rise of mass education in differentiating children's experiences from those in agricultural societies. Research on changes *within* modern societies may also be conceptualized. For instance, particularly in the United States, emphasis on strict manners, characteristic of the 19th-century middle class, gave way to looser habits in a process sometimes described as *informalization* (Wouters, 2007). Comparison also helps organize findings, as in juxtaposing patterns of illegitimacy in Latin American history with family structures in Western Europe.

Beyond overarching conceptual frameworks, historians are interested not only in portraying key aspects

of childhood in the past, but in determining particularly important points of change and in analyzing the effects of regional cultural and institutional factors in shaping the evolution of childhood.

In this effort, major stages in the history of childhood—what historians call *periodization*—clearly help organize a subsequent discussion of the ways historians seek to manage the phenomenon of change over time, often amid considerable debate. At what points do substantial shifts in direction occur? This then follows up on periodization by discussing specific markers, like the advent of agricultural societies or the impact of the major world religions. Modern, industrial societies began to emerge essentially in the 19th century, and with them a host of significant shifts in the ways children were viewed and treated. Elements of these trends gained more global purchase in the 20th century, although under different specific auspices such as communism. Each period, including the contemporary era, requires a balance between basic features—and, sometimes, the impact of new interregional contacts—as well as distinctive regional approaches; comparison remains essential.

The chapter ends with a discussion of ongoing opportunities in the history of childhood, including opportunities for interdisciplinary audiences and interactions. This is a field with considerable achievement to record, but many unanswered or incompletely answered questions, and it is exciting to consider what is still to be achieved.

### Emergence of the History of Childhood

The history of children and childhood is a relatively new field. Antiquarian historians, talking about daily life in the past without much analytical structure, often included descriptive information about children and childrearing, sometimes offering valuable data. But the emergence of social history as a more formal subdiscipline, effectively in the 1950s and 1960s, provided the framework within which attention to children could emerge more systematically. Even here, however, there were hesitations, as targets for other topics, such as the working class, ethnic and immigrant groups, and then women, commanded pride of place. The social history movement promised new attention to inarticulate populations in the past, and children certainly qualified on this count, but other targets long seemed more attractive (Gardner & Adams, 1983). It was revealing, for example, that a major specialist journal devoted to children's history—the *Journal of the History of Childhood and Youth*, now widely recognized—emerged only in 2008.

As early as 1960, however, French scholar Philippe Ariès came out with what, in English translation 2 years later, was titled *Centuries of Childhood* (Ariès, 1962). His conclusions that ideas of childhood were, to some extent, a modern invention helped stimulate a flurry of work, much of it bent on expanding the claims about significant differentials between modern and premodern childhood in the West. A half-decade later, a number of studies of colonial New England (Demos, 2000; Greven, 1995; Zuckerman, 1970), which in many ways launched the new social history movement in the United States, focused strongly on family life including parent-child relationships. Turmoil in the 1960s also helped generate, somewhat separately, a number of important historical projects on adolescence and youth (Fass, 1997; Gillis, 1981; Kett, 1978; Scales, Benson, Leffert, & Blyth, 2004). A new subfield, or a cluster of subfields, seemed to be off and running.

Yet interest faltered rather quickly, although without disappearing entirely. Two reasons can be suggested for this pause, and both of them continue to condition work on children's history. First, the idea that young people were going to be the leading protest group of the future, widely trumpeted amid the turmoil around 1968, faded after 1973. Young people might continue to fuel protest efforts, but protest organized around youth specifically trailed off dramatically. Second, at least in industrial societies, the demographic base for youth protest was eroded by the return of rapidly declining birth rates. One insistent reason for attention at least to the later periods of childhood diminished considerably. Women and other groups claimed more scholarly energy, because of their continued position in the public eye. Social historians have their own susceptibilities to current fads and fashions.

More intriguing still was the extent to which some of the initial scholarly flurry turned out to be a bit of a false start. Ariès' work still deserves attention, but it was based excessively on upper-class evidence, rather than more representative data. And, his position was exaggerated, even misrepresented, by some enthusiastic adepts (deMause, 2006). A number of historians began claiming huge gaps between modern and premodern childhood, around issues as diverse as discipline and affection. One leading British historian, for example, argued that affection for children was essentially a modern invention, at least in Western society, and that in considering premodern families one would expect to find about the same level of emotion as is present in a bird's nest (Shorter, 1976; Stone, 1983). This kind of analysis—although it generated a number of interesting specific findings about premodern parent-child

relationships—roused a storm of protest from experts in medieval and early modern history (Hunt, 1970). Many of these revisionists were bent not only on insisting on the humanness of parents in the past, but on arguing further that there was no essential difference between premodern and modern family contexts for children (Pollock, 1983). Here too, debate prompted some important new discoveries, but it ultimately proved counterproductive in downplaying the significance of change—however nuanced—in the history of children. After the burst of initial work, and the ensuing countersalvo, the field went largely silent for several years.

### Redefining the Scholarship

Obviously, there are lessons in this somewhat unusual scholarly episode, and as historians now consider research on children and childhood they largely define the purposes of their work with these lessons in mind. First, the reasons for work on childhood rest broadly on the importance of using history to better understand the forces—both old and new—that shape the experience of being a child and the vital role that caring for and dealing with children play in any society. We understand the past better if we actively include children in the historical record, and we understand children better if we see them, in part, as products of an often complex and interesting history. More transient themes, like youth as a protest group, take a back seat to these larger purposes.

Second, we cannot cast our history in terms of stark divides between modern and premodern systems. Changes and variations occur well before modernity, and modernity does not contrast entirely with what went before. But change is real, as against undue assumptions of continuity in, say, parent-child relationships, and modern conditions, carefully explored, played a role in the process of change during the past two centuries plus. There is abundant opportunity now for a new and more sophisticated look at these key changes in childhood caused by modern conditions.

Third, work on the history of childhood, particularly during the resurgence of interest in the past two decades, focuses on two kinds of topics that help further define the purpose of historical inquiry. Many historians concentrate on institutional or structural features of childhood, where clear data repositories often exist and/or where reasonably precise measurements are possible (Laslett, 1966; Seccombe, 1993; Wells, 1985). Another category of research addresses more qualitative aspects of children's lives or parent-child relationships, ranging from issues of

discipline to patterns of psychosomatic illness to efforts to probe children's emotional expectations and experiences (Brumberg, 2000; Greven, 1991). Ultimately, the two kinds of topics need to be combined, and their trajectories are never entirely separate. But some sense of both domains helps introduce the range of possibilities currently being explored.

On the more structural side: Scholars dealing with the 19th century have devoted considerable energy, for example, to the study of reform institutions and orphanages, as significant to the actual children involved (not always large numbers) and more broadly revealing of wider social attitudes to children (Grossberg, 1988). Legal structures receive attention, for example the late-19th-century "invention" of the concept of juvenile delinquency (and its rapid spread to places like Japan from initially Western origins). Schooling offers an extensive historiography, although more often framed in terms of the history of education, as a subfield, than in terms of children's experiences per se. Religious or political policies also enter into the exploration of structures, for example in approaches to understanding or regulating children's sexuality or in stipulations about child labor or school attendance (Binder, Geis, & Bruce, 2000; Lasonde, 2005; Schlossman, 2005; Staff, Mont'Alvao, and Mortimer, Chapter 9, this *Handbook*, this volume; Vinovskis, 1985).

Another category of essentially structural research focuses on demographic materials broadly construed. A huge development in the modern history of childhood involves the installation of the demographic transition—that is, the now-widespread contemporary regime in which both child death rates and per capita birth rates drop substantially. The demographic transition occurred, historically, in a number of Western societies, where gradual birth rate declines in the 19th century coalesced with the more sudden advent of lower child death rates between 1880 and 1920—from 20% or more among all infants born, in the former date, to 5% or less by the latter (Wrigley, 1969). This new demography brought direct changes for children themselves in terms, for example, of experiences and expectations surrounding death, or the number of siblings available for interaction. It also both reflected and caused changes in adult thinking about children, in terms for example of attachment to the individual child or new beliefs in the possibility of limiting disease (Zelizer, 1958).

In part because of Western example and influence (sometimes translated as well through international agencies such as United Nations population conferences),



somewhat similar patterns have developed in other regions of the world during the 20th and early 21st centuries. But not only has the precise timing differed from that of Western Europe and the United States, but so have the changes themselves. In many cases, for example, such as post–World War II China, dramatic reductions in child death rates have preceded significant shifts in birth rates—almost the reverse of the Western combination. Here is a case, clearly, where ultimately widespread structural changes also have continued to reflect distinctive regional policies and precedents, generating broadly similar trends but considerable complexity around specifics.

Efforts to probe the experience of being a child or the more intimate aspects of parent-child relationships more directly have drawn wide attention as well, both in the first phase of childhood history—for example, around the claims about family affect—and also more recently. Work on Chinese family patterns, from at least the classical period until modern times, has plausibly speculated about unusually intense bonds formed between mothers and sons. The Chinese system of patriarchy emphasized female inferiority with unusual vigor—illustrated, for example, in the extensive practice of foot binding—but in so doing created a situation in which mothers could both express and protect themselves by forming strong emotional links with their sons (Baker, 1970; Chan & Tan, 2004; Hsiung, 2005; Kinney, 1995, 2003; Loewe, 1968; Raphals, 1998). The result could be a considerable assurance of support for older mothers, particularly in widowhood, along with opportunities for informal assertions of power; but the implications for children themselves deserve attention as well, potentially contrasting to some degree with looser mother-son relationships in other agricultural societies such as Greece and Rome.

An intriguing study, now a generation old, examined friendships among male teenagers in the 19th-century middle class in the United States, extending into early adulthood. In a situation where males realized that marriage opportunities and even courtship must be delayed, in the interests of economic establishment before family formation, surprisingly (by contemporary standards) intense emotions went into male-male friendships (Rosenzweig, 1999; Rotundo, 1994). Letter writing suggested deep affection. Physical contacts and embraces—although not necessarily actual sexuality—were common (in a society in which, when traveling, for example, men often slept together). But these relationships began to change substantially by the end of the 19th century—far more than was true for somewhat similar intimacies among

young women—in part because of increasing emphasis on courtship opportunities including, by the early 20th century, the advent of the new practice of dating and in part because of concomitant attacks on the dangers of homosexuality.

A final qualitative example, also from the United States, is just opening up for more extensive inquiry. The idea of boredom began to emerge in the 18th century, a counterpart to growing Enlightenment interest in happiness and this-world rewards (Stearns, 2003). People may have been bored before, but it was significant that, in English, they lacked a word until that point—and arguably were, therefore, far less likely to have the experience. Boredom began to apply to children in the later 19th century, but mainly in terms of character injunctions: Children should be brought up with sufficient initiative and internal resource not to be bored, because boredom was offensive to others, a real discourtesy. By the second half of the 20th century, however, the concept and its association with childhood had slipped, and now a bored child was a criticism to those around him or her—parents, teachers, whoever should be keeping the child entertained. Children, quick to see a new advantage, began correspondingly to learn that complaints of boredom served a useful purpose in galvanizing adult attention (but also, possibly, in helping children to evaluate their quality of life). Change is complicated, and relatively quick from one generation to the next.

Shifts in structure and in qualitative experience often intertwine, although figuring out priority is not always easy. Did the modern decline in birth rate generate more attention and, possibly, affection from parent to child given the possibility of greater focus on individual children and the greater assurance of child survival (Zelizer, 1958)? Or, did new ideas about the emotional as well as economic investment owed to children by good parents help cause the decision to cut the birth rate, the better to live up to new expectations? Clearly a relation can be explored, but equally clearly its dimensions have many layers.

The history of childhood already has many dimensions, from structural features to emotional experiences, and more are opening up as scholarly interest expands. Whether the goal is a fuller picture of the past—the nature of Chinese culture and society in the classical period, with some of the special features of mother-son relationships now actively included—or an understanding of connections between past and present, as in exploring the several specific patterns and outcomes of the ongoing demographic transition, history provides both evidence and analytical challenge.

## FROM EVIDENCE TO GEOGRAPHY: CONSTRAINTS IN THE FIELD OF CHILDHOOD HISTORY

Several problems constrain historical work on children, and one at least is distinctive and intractable. Issues of evidence are paramount. Social history, from the outset, deliberately focused on groups that rarely left the most obvious records—groups in various ways out of power, not in command of the mainstream channels of communication. Children, however, pose a special case within this general spectrum, and although social historians have been imaginative in generating evidence that allows comments on the behaviors and attitudes of “inarticulate” adult groups, children, historically, raise special barriers because virtually all of the obvious information about them is filtered through some kind of adult lens.

Of course, there is some direct behavioral evidence, at least in modern times, as in statistical data about children in the workforce or school attendance rates or delinquency. Historians have also sought to make use of material artifacts, but even these, for younger children at least, often require some adult provision, as in the crafting of toys (Baxter, 2005; Crosnoe and Benner, Chapter 7, this *Handbook*, this volume; Gutman & de Connick-Smith, 2008; Wileman, 2005). But lots of the questions one would like to ask children—what was the experience of school like, or what was it like to be an apprentice to an uncle—simply lack direct accounts. We have to hear from adult observers, or recallers (like Ben Franklin in his autobiography, excoriating his printer-uncle-master), or prescriptive recommenders. The frequent blurring of topics—between histories of children and of childhood—restates the problem: Childhood is based on adult definitions and perceptions, whereas children ideally ought to be more directly approachable.

There are, in sum, evidentiary limits, even though historians have been imaginative in dealing with the constraint, and surely additional efforts will emerge in the future. One of the causes of the sometimes-disproportionate interest in institutions, such as reform schools or orphanages, is that at least there are sources to consult, even though they convey children's behaviors and reactions only indirectly and for atypical populations. The challenge is pervasive.

A second constraint is more familiar, but again quite difficult. It is considerably easier to study the history of children and childhood for middle- and upper-class groups than it is for the various popular classes. In the United States, for example, a number of studies of children's

history have focused on prescriptive literature that spells out expectations and standards. The literature is often interesting and revealing, and it is fairly readily accessible; but it also disproportionately reflects attitudes current in European American, Protestant, and middle- and upper-middle-class families. Similarly, it is usually easier to get historical evidence about children in urban settings as opposed to rural, for literary rates and government record keeping are better developed in cities. Many of the most innovative approaches to childhood history, probing topics like emotional standards, not only begin but also sometimes end with the middle- and upper-class audience. This bias was, as we have seen, a problem with the great study by Ariès, and it continues to affect the field.

A number of historians have explicitly attempted to probe lower-class situations, or with minority clusters such as (in the United States) Catholics or Jews. In many cases, it proves easier to deal with the more structural features of childhood in this expansive effort than with more qualitative issues. Thus, we can get a fair idea of birth and death rate patterns by social class, at least from the 18th or 19th centuries onward. Court records may suggest certain kinds of behaviors for lower-class children, as well as social expectations that were brought to bear on the lower classes (A. Platt, 1977; Wegs, 1989). One of the several reasons for the popularity of institutional studies, applied to orphanages or reform schools, is that they open some window onto lower-class situations, even though the institutions themselves typically reflected primarily middle- or upper-class values (A. Platt, 1977; Wegs, 1989). Lower-class families often used institutions for their own purposes to help with certain aspects of childhood, and institutional records, however unintentionally, help chart these patterns.

The history of childhood is not, in sum, hopelessly compromised by class bias. In some cases—Latin America is an example, with work on historical patterns of illegitimacy (Hecht, 2002)—attention to lower-class childhoods has preceded a more systematic historical approach to the subject. Still, class issues are not always easy to resolve, and some of the most common generalizations in the field do not necessarily cover as wide a social spectrum as might be desired.

Gender factors, by contrast, are more often accommodated. The history of childhood, particularly in the past two or three decades, has grown up with assumptions about the importance and relevance of female history. Whereas records on boys are in some cases more accessible than those on girls, reflecting disparities in patriarchal societies

of the past, the evidence issue is much less troubling for gender than it is for social class. Many childhood histories aim specifically at gender factors as part of their purview. Awareness of gender is obviously a vital component of the history of children, but it does not constitute a systematic limitation on the field as it has developed in recent decades. Geography represents the final hurdle in the subdiscipline of childhood history as it has thus far emerged. Here, even more than with social class, one hopes that existing disparities are temporary, for there is no fundamental reason that geographic disparities should burden the field in coming decades. It is a fact, nevertheless, that the history of childhood first emerged with attention to North America and Western Europe (including, for the classical period, Greece and Rome), and the richest historiographies still apply to these regions. Topical innovations in Western studies of children in the past have not uniformly spread to work in other parts of the world, which means that more global generalizations are often impeded and/or that they are offered disproportionately on the basis of Western findings and evidence (Shorter, 1976). There are some opportunities here—in the modern period, many key changes in childhood first occurred in the West, which means that Western topics may reasonably trigger at least certain kinds of inquiries elsewhere—but also some real dangers, if Western patterns are assumed to be paradigmatic.

### Geography

And the other fact is that, whereas interest in the history of childhood is spreading fruitfully, regional disparities remain stubborn, and in some cases not easily explainable. Important works on the history of childhood have emerged for China (Hsiung, 2005), applying to a number of different historical periods. Slightly short of this standard, but still reflecting scholarly progress, are efforts for Latin America and Russia (Hecht, 2002; Kelly, 2007). There is also some interesting research on Sub-Saharan Africa (Carton, 2000). The subfield of childhood history is much less well represented, however, for Islam and for South Asia, and attention to Japan is less extensive than might be expected—aside from important studies on schooling (Fass, 2003).

Geographical disparities reflect the relative newness, still, of the history of childhood, along with important regional differences in topical expansion. (Social history, in general, for example, is less well developed for the Middle East than for many other regions, and gaps in the history of childhood reflect this wider disparity.) Other fields may help compensate: Work in anthropology or religion can apply to children in past periods in places

like India (Kakar, 1978; Scharfe, 2002; Vats & Mugdal, 1999). The geographical unevenness of formal historical research continues to bedevil the field. Not surprisingly, as one result, only one or two projects have even tentatively ventured a global history of childhood (deMause, 2006; Stearns, 2011).

The result also, finally, constrains comparative work. Most interested scholars have deployed their talents on single regions, challenged enough to deal with the issues of evidence and analysis these targets involve. Only brief comparative ventures have been sketched. One intriguing article, for example, utilizes the Ariès thesis for an inquiry into Japan, and the findings suggest how a fuller commitment to comparative history might pay off in future (B. Platt, 2005). However, this ambition remains for a next generation of scholarship, and certainly some of the residual regional disparities need to be repaired before comparative work can be widely undertaken.

Overall, the history of childhood, still fairly new, reflects some characteristic growing pains. Issues of evidence and social range are still being worked out. Geographic gaps reflect some issues common to other innovative areas in historical research. Awareness of these challenges should guide further work in the field. The challenge of listening to what children themselves said and experienced in the past is the most distinctive ingredient, and it will legitimately command ongoing and imaginative attention in the future.

### PERIODIZATION

As a discipline history deals with change, and although many individual historians are more interested in the characteristics of one particular society in one point in time, or in stories that may or may not highlight change, there is an overall goal of capturing how and why change occurs and of what continuities accompany even fundamental shifts.

Some very ambitious agendas about change have been ventured, as we have seen. Ariès's idea, embellished by a number of scholars, is the most prominent: that there was, at least in Western society, a fundamental divide between premodern and modern approaches to childhood, with premodern attention riveted on seeing children as little adults, not clearly distinguishable from adults at least after a period of infancy, modern approaches far more attached to defining and often celebrating childhood as a distinct phase of life. Embellishments to this argument, to be explored more fully later, included attention to the contrast between high infant death rates in premodern societies,

compared to explicit efforts to reduce death in the modern context. Some arguments, as well, contrasted a purely utilitarian approach to children in premodern conditions, mainly as sources of labor to be disciplined as severely as required, with the more celebratory modern approach that tended to see children as desirable for their own sake, with emphasis on mutual love and affection, and that reconsidered many traditional approaches to childrearing, such as physical discipline (deMause, 2006; Zuckerman & Koops, 2003). The fact that revisionists have prompted significant modifications of these modernist arguments, particularly toward recognizing a greater complexity in premodern childhoods but also in noting some drawbacks to modern approaches, has not entirely eliminated the premodern/modern analytical structure.

Indeed, additional components can be suggested, as we learn more about modern patterns of change, although they too complicate any facile celebration of the modern approach. Another European historian, Johann Huizinga, called attention to what he termed a decline of play in the childhoods that began emerging in Western Europe from the late 18th century onward (Chudacoff, 2007; Huizinga, 1995). A medievalist, who was also interested in anthropological accounts of children's play in Africa and other societies, Huizinga emphasized the opportunities for play as a set of spontaneous, creative activities by children as individuals and in informal groups in contexts such as preindustrial villages. Huizinga stressed the importance of play in ultimately developing adult capacities, although he saw growing adult intervention against spontaneous play beginning in the later 18th century, with increasing focus on formal education and on monitoring children's activities and artifacts in the interests of adult-prescribed developmental norms. This pattern of adult intervention would simply get worse with time. Other historians, dealing for example with the rise of supervised playgrounds in the early 20th century, or the development of educational toys even earlier, have picked up on some of these themes (Cross, 1997). Here is another case, then, in which a large scheme about traditional versus modern childhoods, although not really dominant in current historiography, still hovers around the edges, inspiring certain specific projects and more limited interpretations. On the face, Huizinga and Ariès would seem at odds in their particular analyses of what the modern involves, but they might in fact overlap to some degree: Ariès was willing to argue that the traditional lack of defined childhoods gave actual children considerable space of their own, whereas more modern approaches, if in theory more accepting of children, often justified and motivated increasing intervention.

A few scholars, finally, have sketched a possible distinction between characteristic modern childhoods and a post-modern shift (Postman, 1994). A number have contrasted the glorification of children's innocence, which was part of the modern trends that opened up in the 18th and early 19th centuries in the West, with a more ominous contemporary pattern in which young people are no longer protected against various forms of adult-sponsored corruption, such as modern representations of sex and violence (Gurstein, 1999; Jolivet, 1977; Postman, 1994). Here too, most historians of childhood have not picked up on such a challenging chronological framework, but there has been some spillover into specific research projects on the later 20th century as a time of renewed change.

The big theories about a modern "discovery" of childhood continue to exercise some influence, but in the main they have been overtaken, in the expanding body of recent historical work on children, by more limited schemes. Many historians, devoted to innovative work on children in the past, are content to use established markers, defined by political regime or high culture, assuming that conventional periods are at the least a convenient target for their research and, possibly, that they correspond to definable features of childhood itself. Thus, a great deal of work has focused on the Roman Republic and Empire as a valid unit for the study of children (Cohen & Rutter, 2007; Dixon, 1992, 2001; Eyben, 1993; Nathan, 2000; Patterson, 2001; Pomeroy, 1997; Rawson, 1991, 2003). The scholars involved in this period trace internal trends during the Roman era, and they assume that Roman conditions differed from those that would describe the subsequent Middle Ages in Europe, but they do not pretend explicitly to carve out patterns of change based on internal dynamics of childhood. Some recent efforts on China essentially adopt the same tactics, focusing, for example, on the Han Dynasty and its conventional demarcation of political change, and assuming that the result is an acceptable framework for examining childhood. Studies that use "Renaissance" or "early modern" to describe the chronological boundaries of their subject adopt essentially the same approach (Ozment, 1985).

There is tension between some of the pioneering efforts to take out a chronology based on major features of childhood in society—such as the identification of childhood itself, or a distinctive approach to play—and recent efforts to probe more deeply into various aspects of childhood but within largely conventional chronological dimensions, based on factors external to children themselves (Fass, 2003). To be sure, some important work skates in between the two poles. Several studies of the 19th century have



explicitly justified the chronological framework in terms of factors directly linked to changes for children—such as the Industrial Revolution or new claims by the state to intervene in childhood (Cunningham, 2005; Heywood, 1988, 2001; Maynes, 1985). The chronological markers may seem familiar—the use of the 19th century as a period is hardly an invention of historians of childhood—but the actual focus is squarely on larger changes in children's contexts.

## AGRICULTURAL SOCIETIES

Most of the time periods historians of childhood work on fall within the framework of agricultural societies and economies, from the river valley civilizations that began with Sumeria after about 3500 BCE, to the great colonial and land-based empires of the early modern period. Important changes in childhood surely accompanied developments before the advent of agriculture, including the various phases of human evolution and tool use and the great migrations out of Africa that spread human populations widely around the globe. But it is with agriculture that most focused historical scholarship begins to be deployed.

Settled agriculture first developed on the southern shores of the Black Sea, from about 9000 BCE onward. It spread gradually to other regions, including south Asia, Africa, and Europe. Agriculture was separately invented in East Asia, around 7000 BCE, and again in parts of the Americas after 5000 BCE. In these cases it spread gradually, although hunting and gathering and also nomadic economies long remained important.

Agriculture had important impacts on childhood, in contrast to the systems of hunters-gatherers. We have scant direct records of children in hunting and gathering societies historically, although contemporary remnants provide some cues. The most salient points were the limits this original human economy posed on numbers of children per family. Resource constraints and the demands of recurrent travel strongly affected the desired birth rate, and prolonged lactation by mothers—breastfeeding for up to 4 years—provided a key mechanism for birth control. Children were not particularly useful, at least until the teenage years. Indeed, there was more: Contemporary studies of hunter-gatherers suggest that when mothers take their children with them, to forage for nuts and berries, their productivity drops. Children in hunting and gathering societies have abundant opportunities for play, but by the same token having too many children, per family or per

band, risked straining resources (Arden & Hutson, 2006; Burguière, Klapish-Zuber, Segalen, & Zonabend, 1996; Hanley, 1999). The demands of frequent migration in search of game also militated against high birth rates.

Agriculture changed much of this by providing opportunities for children to be more useful and by creating the family as a clearer economic unit in which child, and particularly youth, labor would be a key component (Staff, Mont'Alvao, & Mortimer, Chapter 9, this *Handbook*, this volume). With more abundant food supplies, on average, the means existed to expand the birth rate per average family, and this along with the new uses/needs for children produced the expected result. In most agricultural societies families sought an average birth rate of sixth to eight children, sufficient to provide adequate labor but not overwhelming available family property for surviving adults to inherit and maintain when coupled with normal reductions in numbers through high infant mortality. Obviously, some families were devastated by unexpected fertility, others harmed by infertility; some sharing of children among families was a characteristic response. Agricultural societies also highlighted the link between resources and birth rates through the common pattern in which upper-class families had much higher birth rates than peasant and artisanal classes.

But even ordinary people had many offspring, save for the 20% or so of families where one or both partners were infertile (Wrigley, 1969). Villages flocked with children, normally over half the total population. Not only for parents but also for extended families and entire communities, coexistence with, and oversight of, children was a central feature of daily life. The importance of children in defining a successful marriage was high. In early civilizations like Egypt, childless couples were regarded with suspicion and, at the least, urged to adopt (Feucht, 2001).

Agricultural societies confirmed the essential purpose of children—again, in contrast to hunting and gathering traditions—in providing labor and training for future work. This was the goal that guided family decisions about birth rates, and this was the purpose around which many other aspects of childhood were organized. Gender distinctions, which had been considerable in hunting and gathering societies, in many ways intensified. Girls and boys trained for, and did, different kinds of work; but beyond these role distinctions, agricultural societies introduced much more formal patriarchal systems, with girls impressed early on with their inferiority. Traditional Chinese society offers an illustration, in placing girl infants at the foot of the parental bed, boys at the side (Ebrey, 2002). Many children, although

expected to work from Age 5 or so onward, also had considerable periods of play—the rigor of family labor should not be exaggerated, although work demands on teenagers were frequently intense.

Nevertheless, work requirements organized many other features of childhood in agricultural economies. Most obviously, all agricultural societies placed great emphasis on the importance of obedience. Obedience could seem essential simply in providing order in fairly large broods of siblings, but it also helped orient children for the often-menial tasks they would begin to perform. Disobedience, correspondingly, was severely reprov'd; in ancient Israel, parents could in principle order that a rebellious son be stoned to death. Many agricultural societies differentiated strongly between a first few years of infancy, where children were indulged, and a passage between Ages 5 and 7 into the more serious stuff of life, including work service; this pattern was seen both in India and in Japan, for example (Stearns, 2012c). Agricultural families also sought to assure continued work from their children into their late teens and beyond. Although young children could help their parents, their work did not cover the resources needed to sustain them. Only continued service allowed children to pay off in economic terms. Agricultural villages usually organized some opportunities for teenagers to blow off steam, in various games and rituals, but they also assumed continued labor in the family economy. Some agricultural families also deliberately conceived a final child when parents were in their early 40s to provide available assistance when the parents reached old age. On another front, marriage arrangements, with parents actively picking out spouses for their children, reflected the primacy of economic factors over individualized choices by young people (Gillis, 1985). Family economies in agricultural societies, finally, dictated a great deal of legal attention to issues of inheritance. Rules varied with the case, in terms of allocations among children of different ages and genders, but in general, the importance of clarity was obvious, both for family continuity and in terms of providing motivations for children themselves as they contemplated their futures. Children commonly accepted parental choices for marriage because of ingrained obedience but also their understanding of the inheritance that would ensue.

Death rates remained high in agricultural societies, with 30% to 50% of all children born dying before Age 2 (Wrigley, 1969). Infectious diseases caused part of this high mortality, but digestive ailments were also common. Children themselves lived amid frequent death of siblings,

and at least in some cultures, the fear of death was actively invoked as a disciplinary mechanism to keep children in line (Delumeau, 1990). Against the assumptions of some early historians of childhood that agricultural families dismissed child death readily because it was so common, we know that deaths of children were commonly mourned. But medical help was less often called for children than for adults, reflecting some sense of inevitability, and markers for children's deaths were far simpler than those for adults (Stannard, 1979). Efforts to prevent accidents—for example, children falling into wells—were often surprisingly casual. For agricultural families not only had to expect high death rates among children, but to some degree depended on them to align birth rates with available resources and inheritance possibilities. Finally, in many agricultural societies, infanticide was frequently practiced, particularly among baby girls, as a means of population control (Eyben, 1993). Many agricultural societies also condoned killing deformed children (Milner, 2000).

Different agricultural societies introduced different ideas and practices around children and childhood. Ancient Egypt, for example, emphasized gender distinctions among children less than neighboring Mesopotamia did, to the amazement of Mesopotamian travelers. Infanticide was not practiced initially in Egypt, perhaps because of more assured resources in the fertile Nile valley. All agricultural civilizations generated economic and social distinctions among children depending on social class, but the Mayan practice of elongating the skulls of elite members by wrapping infants' heads in tight bands was obviously distinctive, creating a visual testimony to social status for lifetimes. More generally, in all the early agricultural civilizations, depending as they did on the introduction of writing, a few elite children had opportunities for formal education that were not available to the masses (Arden & Hutson, 2006; Duncan, Magnuson, & Votruba-Drzal, Chapter 14, this *Handbook*, this volume).

The more elaborate cultures created by the classical civilizations between 600 BCE and 600 CE set some wider distinctions among childhoods by region, some of which would prove quite durable. The significance of these civilizational differences must be compared with the features widely shared by children in all agricultural societies, and there is opportunity here for further analysis as we build up a wider store of historical case studies.

Classical China, for example, widely introduced practices that emphasized familial hierarchies more formally than was common elsewhere. Chinese culture, articulated further through Confucianism, emphasized deference of

children to their parents. Etiquette governed relationships among siblings themselves, with pride of place of course to the eldest son. Children were taught to bow to their parents and other elders, but younger children also bowed to their older siblings. Parents were routinely supported by courts of law, in case of any disputes with children: A widely quoted saying held that “no parents in the world are wrong.” Shortly after the classical period hierarchy was also enforced by another distinctive practice, which spread gradually but inexorably in the upper classes and cities: the practice of foot binding for young females, whereby girls and women would be permanently constrained in their movements although also, in principle, distinctively beautiful (Baker, 1970; Chan & Tan, 2005; Hsiung, 2005; Kinney, 1995, 2003; Raphals, 1998).

Confucianism also encouraged education, although opportunities varied greatly by social class. Parents were urged to take responsibility for their offspring’s educational progress. In a famous case, when the philosopher Mencius was young, he turned in some mediocre assignments, and in response his mother deliberately spoiled a day’s worth of weaving to show him that lost time could never be regained.

Childhoods in classical Greece and Rome differed from those in China in at least some respects. There was less emphasis on intense emotional bonds between mothers and children, a comparative point suggested earlier in this chapter. Women had a slightly firmer position in Roman than in Chinese families, which along with other factors may have prompted a bit less focus on bonding with sons as a means of expression and protection. Mediterranean art represented children more realistically than was the case in China, possibly reflecting a greater interest in children as individuals. Youth also received more attention in Mediterranean culture—as targets of education, as symbols of beauty and athleticism, but also as potential sources of turbulence that required careful controls. Sexual liaisons between elite males and adolescent boys, particularly common in Greece, differed from Chinese practice (Cohen & Rutter, 2007; Dixon, 1992; Eyben, 1993; Nathan, 2000; Patterson, 2001; Pomeroy, 1997; Rawson, 1991, 2003).

At the same time, however, similarities between Rome and China are striking, reflecting perhaps some common imperial themes but even more the basic relations between an agricultural economy and childhood. Both societies experienced frequent infant death, and both generated comments on how high mortality created instability in adult relationships with children. Both societies used infanticide, particularly female infanticide, with rates

rising as high as 20% of all girls born (despite some efforts to regulate the practice). Gender distinctions were strong in both cases, although upper-class girls might nevertheless acquire some education. Education itself, in both societies as well, emphasized rote learning and memorization, with a strong literary bent. Importance of parental authority and obedience were obvious but fundamental common features, along with work obligations for the majority of children. Neither society, finally, exhibited much appreciation for childish qualities, nor generated much esteem for childhood itself. Memoirs rarely mentioned childhood, and the exceptions usually noted the sternness of fathers. Children who were particularly mature and adult-like came in for particular praise: Romans often praised the *puer senex*, or “old child.” These general characteristics were not uniform: Different personality and family settings could play a role, for example, in degrees of indulgence for infants.

We know far less about childhood in classical India than for the other two big classical civilizations, which constrains comparison. Indian parents may have been somewhat more indulgent of young children, but then stricter discipline, including Hindu religious training, entered in as early as Age 8. Infanticide may have been less common, but it was practiced. Work obligations, predictably, were extensive.

Overall, the classical period highlights the tension between the importance of regional forces and features in shaping distinctive versions of common experiences, and the larger requirements of agricultural economies and their resulting social and gender inequalities.

## THE ROLE OF RELIGION

The advent of major world religions, although not tidy chronologically, introduces some additional themes and comparisons into the history of childhood if not at the level of the impact of agriculture. Basic features of the agricultural societies continued to shape childhood, but the religions provided some interesting innovations within this framework, and generated important new comparative issues.

World religions—defined as religions with a strong missionary impulse and the capacity to spread over political and cultural borders—did not emerge all at once. Hinduism, as it gradually evolved in India, had some characteristics of a world religion. However, Buddhism was the first to meet the criteria fully. Christianity emerged

later, and Islam, rising after 600 CE, was the newest of all. It was only in the centuries after 300 CE that the world religions began a period of particularly active spread, in part because of the decline of the great classical empires.

All the religions placed considerable emphasis on children and on the duties of parents, including duties of providing religious and moral instruction. All continued to stress obedience, adding reinforcement from the need to obey God or the divine order to more conventional injunctions about heeding parents. All attempted to provide some guidance in dealing with death, including the death of infants.

The world religions placed great emphasis on the soul or divine element present in each child. Partly on the strength of this belief, all the religions, but particularly Islam and Christianity, moved strongly against the practice of infanticide, now termed sinful, and some real results accrued. Religious shelters for abandoned children, although often minimally maintained, provided some new options for new parents. Other protections emerged. Buddhism for example attacked arranged child marriages, urging that people must be old enough to provide informed consent. Islam provided elaborate guidance for the kindly treatment of orphans (Browning, Green, & Witte, 2006; Cabezón, 1992; Chakravarti, 1987; Gernet, 1995).

The world religions, like Judaism and Hinduism before, placed growing emphasis on education and schools, if only to teach skills needed for religious instruction. Islam was most active in the centuries after 600 CE, and religious schools spread widely even in rural areas, undoubtedly bringing a larger percentage of children into at least brief contact with education than had occurred ever before. Boys tended to be favored for religious schools, but girls had some opportunities as well. Both Quranic schools and individual tutors were available to Muslim girls, although their attendance was usually shorter than that of boys. Islam explicitly encouraged schools in a new movement beginning in the 10th century, as leaders argued that group exchange and competition promoted more learning than did individual lessons (Berkey, 1992; Nakosteen, 1984; Reagan, 2000). A considerable literature on educational methods emerged in Islam, where literacy may have risen as high as 30% by the 11th century. In Christian Europe, including Russia, education advanced more slowly, but churches and monasteries did provide new outlets.

Islam also generated critiques of excessive physical discipline, urging that parents avoid anger. It also promoted elaborate discussions of grief and condolence on the deaths of children, in contrast to Christian Europe where

this genre was essentially unknown and where people were urged more simply to bow to God's wisdom.

A key question involves what differences the major religions may have encouraged in parenting and in children's experiences more generally. Comparative historical work here is limited, and there is great opportunity for further analysis particularly by extending inquiries into relevant aspects of Islam and Buddhism.

Even in advance of systematic comparison, however, certain aspects of Christianity raise important issues. Islam emphasized the purity of infants: They were too young to have sinned, and if they died they would go straight to paradise. Christianity, however, introduced a quite different concept through the idea of original sin: Each infant was tainted with the sins of Adam and Eve and would be relieved only through some combination of rituals, beginning with christening, and God's mercy. Emphasis on children's natural sinfulness resulted, although it would be more marked in Protestantism than in most versions of Catholicism. Sinfulness certainly highlighted the need for strong parental discipline and oversight. Larger European imagery often suggested animal-like qualities to young children—their voraciousness at the mother's breast often drew comment. A key reason given for swaddling infants—wrapped them tightly to inhibit motion—was the displeasure at watching infants crawl, another reminder of their animal state. Better to release them only when they could directly learn to walk. Despite the prevalence of imagery and emotion around the Christ child, larger Western notions of childhood tended to be rather severe (Classen, 2005; Immel, 2006; Kertzer & Barbagli, 2001; Lynch, 2003).

Whether ideas about sin led to systemic differences in the treatment of children, as opposed to intellectual discussions, is not fully clear. Certainly, many parents justified the use of fear and anger in disciplining children on the basis of their offspring's sinfulness and the need to correct by whatever means. Invocations that children should fear death and damnation were common. European harshness startled some other societies when encounters occurred. North American Indians commented adversely on the spankings and physical discipline that European intruders visited on their children (Erikson, 1993). But we do not in fact know if Christian children were disciplined, emotionally and physically, more than children in other civilizations—it simply remains a possibility awaiting more ambitious comparative research, but deriving from the undeniable peculiarity in those aspects of Christian doctrine that bore on children at least in theory.



Overall, major religions introduced some important changes in the attitude toward and treatment of children, with a mixture of results. Doctrines specific to particular religions invite further exploration.

## THE EARLY MODERN CENTURIES

Historians, whether dealing with world history or the history of particular societies such as Europe or Latin America, commonly mark off the centuries from roughly 1500 to roughly 1800 as a distinctive period, beginning to modify traditional patterns in important respects but not yet in revolutionary fashion. This periodization may have some bearing on childhood, although as always additional research will be welcome.

Three changes are particularly significant, although two are regional rather than global. In the first place, a number of historians have suggested that, worldwide, children's work burdens may have gone up between 1500 and 1800 (Maynes, Søland, & Benninghaus, 2004; Pomeranz & Topik, 2006). Child labor was not new, but there may have been new pressures (Staff, Mont'Alvao, & Mortimer, Chapter 9, this *Handbook*, this volume). In several societies, the need to produce larger volumes of goods for sale on the market or even for export, rather than concentrating on purely local subsistence needs, may have generated new pressures on children. Certainly children in the new Atlantic slave system were often expected to put in considerable work effort, and the same may have applied to apprentices in Europe, serf families in Russia, or families producing export goods for the growing trade flowing out of China. Evidence is not conclusive, except for particular systems like Atlantic slavery, but the larger point is that even more global changes may have developed and that, if so, they formed an interesting preface to modern times in placing new pressures on children.

Children's lives were disrupted in many ways in the New World, the second major point of change. European settlers were widely critical of "native" practices toward children. Spaniards, for example, routinely claimed that punishments in local Central American villages were too harsh. We know that this was not the only side of pre-Columbian tradition; local societies, for example, carefully crafted toys for children, expressing a more sympathetic side. It is not clear whether colonial masters exaggerated problems to make their own rule seem beneficent, but there is no question that, through regulations and missionary endeavor, they interfered widely with established practices, sowing confusion

in the process. Children of slavery, whether shipped from Africa or born of parents who survived the terrible crossing, faced other pressures. Not only was their work regime demanding, but they also faced the possibility of sales that would disrupt their families again and potentially separate them from one or both parents (Bartell & O'Donnell, 2001; Corsair, 2005; Hecht, 2002; Hoerder, 2002; Hsiung, 2005; King, 1991).

In Latin America a high rate of illegitimate births was a final consequence of the new colonial regimes. Many Spaniards fathered children by native or mixed-blood parents. Percentages of illegitimate children could range between 30% and 50% of all children born, in places like Brazil. Some illegitimate children were ill treated; at the other extreme, a few maintained close contacts with their fathers. The principal result, however, was to prompt further innovations to help mothers cope with single parenthood. Many illegitimate children "circulated" among families, performing labor service (sometimes under harsh discipline) and distributing obligations for support. Latin American elites expressed great concern about rates of illegitimacy, seeing this as a condemnation of lower-class morals despite their own frequent complicity in the process. But the results were not temporary, and would continue to mark Latin American family patterns even in more recent times (Hecht, 2002; Laslett, Oosterveen, & Smith, 1980).

A final area of change in the early modern centuries was largely cultural, with Western Europe as focus. Thanks in large part to the new discoveries of the Scientific Revolution, and the partial decline of some of the stricter versions of Christianity, new interest in children's potential emerged by the late 17th century. John Locke, the English philosopher, led the way in attacking ideas of original sin and urging instead that children constituted a "blank slate" that could be positively filled by education. School opportunities in fact expanded, thanks partly to Protestantism and partly to the needs of a more commercial society. Attacks, at least in principle, on some traditional disciplinary measures resulted from the new thinking. There were also changes in practice as well. By the 18th century Europeans began to stop reusing names of children who had died, introducing new names for new offspring instead—a sign that they were thinking of each child in more individualistic terms. Practices of swaddling children began to decline, meaning that parents or at least mothers began putting more time into childcare. Developments of this sort were hints of wider changes to come, but they reflected new ideas and some impact of economic change even in a society that was, at best, still largely agricultural (Trumbach, 1978).

## MODERN, INDUSTRIAL CHILDHOODS: THE 19TH CENTURY

Without falling into the trap of excessive emphasis on change, a number of innovations began to affect children, initially in Europe and North America, in particular, from the late 18th century onward, reflecting above all the new needs and opportunities of nascent industrial, urban societies. Changes were structural in part, beginning with children's functions and basic demography. They also involved further developments in adult assumptions and expectations about children, partly relating to structural change. They involved as well some measurable shifts in more qualitative aspects of children's lives and their relationships with parents and other adults.

Structure first: Two related developments began to alter the nature of childhood, and childrearing, from the late 18th century onward in many parts of Western Europe and North America. Families in the growing middle class began to send their children to school (Crosnoe & Benner, Chapter 7, this *Handbook*, this volume), and for increasing periods of time, in preference to putting them to work before their mid-teens. Education was seen as important to ultimate careers (or in the case of girls, successful families). Schooling was particularly vital for professional groups, but applied widely to the business sector also. At the same time, as children began to become costs rather than assets to the family economy, the middle class began cutting its birth rate well below traditional levels, relying mainly on sexual abstinence to effect the change (Mintz, 2004; Ryan, 1981).

Birth rate reduction began to be picked up by other social groups, although with varying timing. American land-owning farmers, for example, began to participate by the early 19th century, to assure that there would be enough land to provide suitable inheritance. More gradually, urban workers began to pick up the pattern—in Britain, for example, by the 1870s if not before.

The substitution of schooling for child labor proceeded as well, and the two phenomena were linked. Child labor was widely utilized in the early industrial factories, but by the 19th century concerns began to grow. Working-class families valued children's earnings, but they were concerned about putting their offspring under the direction of strangers; they proved to be amenable to some new regulation. Middle-class reformers trumpeted the evils of factory work versus the benefits of schooling. Headed by Britain, a number of countries, and American states, began to pass laws limiting child labor in factories (Weissbach,

1999). The laws were initially not well enforced, but by the later 19th century governments began to hire inspectors. School attendance laws completed the legislative side of the picture. By the 1870s children in most Western countries regularly attended school, as even traditionalist peasants began to realize the importance of education (Weber, 1976). Although the greatest changes involved children at the primary school level, secondary schools also began to expand, and child labor laws extended to cover nonfactory work and the early teenage years. By the early 20th century—between 1910 and 1920 in the United States—child and adolescent labor began to drop rapidly, in favor of school attendance (Crosnoe & Benner, Chapter 7, this *Handbook*, this volume).

Two other changes ultimately accompanied the transformation of children from workers to students, and the reduction in birth rates. First, national and regional governments began to oversee aspects of childhood for the first time to any wide extent in human history. They partially displaced both religious and family authority in the process. Governments regulated work, required school attendance and organized school curricula, began to produce materials aimed at improving parental practices including hygiene, provided medical care for pregnant women and young children, and offered nutritional support for poor families. Governments began to assume some responsibility for children's health as well as education, hoping among other things to support population size through better public health measures even as birth rates dropped (Heywood, 1988).

Finally—and government actions played a direct role here—child mortality began to decline rapidly. Beliefs that parents, and society more generally, should be able to prevent many infant deaths began to spread during the 19th century, as part of a more progressive vision of society; topics of this sort became staples in the new genre of women's magazines. However, big changes occurred throughout the West from 1880 to 1920, with mortality rates dropping from 20% or more of all children born (dying within 2 years of their birth) to 5% or less; and rates would continue to drop thereafter. In combination with the falling birth rate, this change clearly installed the demographic transition throughout Western Europe and the United States. Corollaries included a smaller overall cohort of children in society at large, compared to the adult segment. Sibling life changed, with fewer siblings to interact with but also fewer sibling deaths to experience. Indeed, the separation of children and death was a first in world history, and had a number of interesting implications for parents and children alike, including the reduced

experience of grief in childhood (Coales & Watkins, 1986; Haines, 1989; Seccombe, 1993).

Overall, in the span of little more than a century, childhood in the West changed from work to education. Birth rates dropped to unprecedented lows, but so did death rates, creating important changes in context. By the late 19th century, the introduction of pediatrics as a medical specialty reflected growing attention to children's health (Colón, 1999; Cone, 1985; Prescott, 1998; Zuckerman & Keder, Chapter 15, this *Handbook*, this volume). Government intervention with children and parents constituted another important innovation.

Along with these fundamental shifts in structure and framework, Western society introduced a number of other changes. Some of these related closely to the structural trends, others reflected particular features of an evolving Western culture. Many continue to challenge historians of childhood, in terms of assessing their significance and impact, and some spark ongoing debate.

Did parents, for example, develop new attachments to individual children once the birth rate dropped and mortality began to decline? In many middle-class households, by the early 20th century, employment of servants declined, and grandparents became less available (because of separate residence), so it is possible that parent-child contacts increased, at least, and possibly (on average) certain kinds of emotional attachment as well. Unquestionably the Western world began to generate an imagery that centered on a loving family, often pictured with parents and children gathered together. In this imagery, at least, emotional bonds and shared pleasures replaced economic contributions in cementing the family unit (Lasch, 1977).

Was there new confusion about what children were for, now that their economic functions declined and birth rates dropped? Compounding the issue was the fact that chores around the house also declined, as children had school obligations and as machines took over some conventional housework. The number of deliberately childless couples unquestionably went up, suggesting that adults generated new levels of variety around the question of whether to have children (Stearns, 2003).

Age segregation of children increased. Urbanization reduced the traditional village phenomenon of groups of various-aged children participating in recreation. Schooling and, probably, the decline in the number of siblings focused more attention on same-age peers (Davidoff, 2012; Hemphill, 2011; Rubin, Bukowski, and Bowker, Chapter 5, this *Handbook*, this volume).

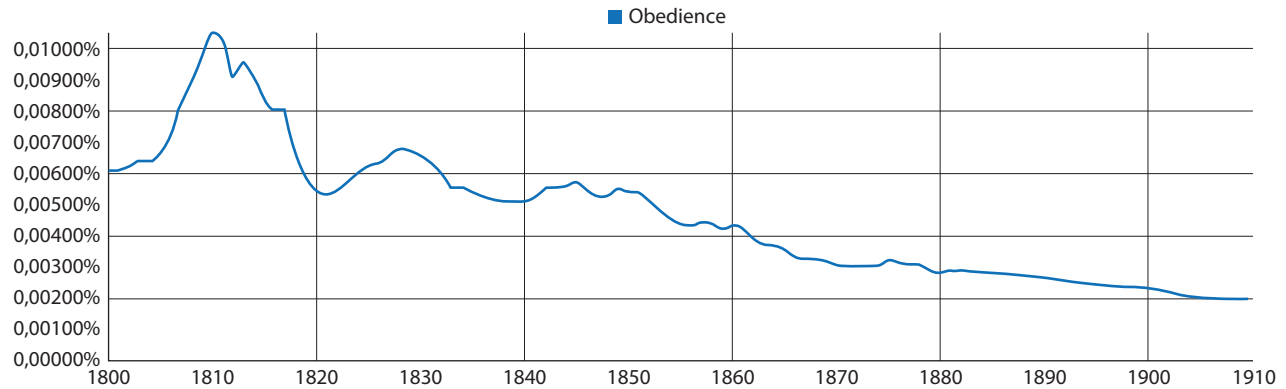
At the same time, Western societies continued to emphasize gender differentiation among children. School curricula for girls stressed domestic topics. Differences in dress and toys were if anything exaggerated. Actual roles, however, increasingly converged, with the growing interest in school success. Gradually, coeducational experiences spread, further complicating gender issues among children by creating new interactions (Tyack, 1995).

Traditional disciplinary tactics were revisited, although change in actual adult practices came slowly. The decline in beliefs in original sin helped prompt growing attacks on the deliberate use of fear or anger in disciplining children. If children were in fact innocents, adults should learn new restraint in dealing with them, lest they introduce needless emotional tension and corruption. This theme was prevalent in most American childrearing manuals from the 1820s onward. Some of these changes coincided also with the growing maternal role in caring for children. With work increasingly located outside the home, many fathers—called upon to be “breadwinners” for the family—saw their contacts with children reduced. Sometimes they were invoked as the disciplinarians of last resort—the phrase was, “Wait till your father gets home.” This same approach encouraged mothers to emphasize gentler emotions in dealing with children, although individual practices varied greatly (Griswold, 1994; Stearns, 1990, 1998a).

Reconsideration of discipline and adult goals for children even called the traditional emphasis on obedience into question (see Figure 20.1).

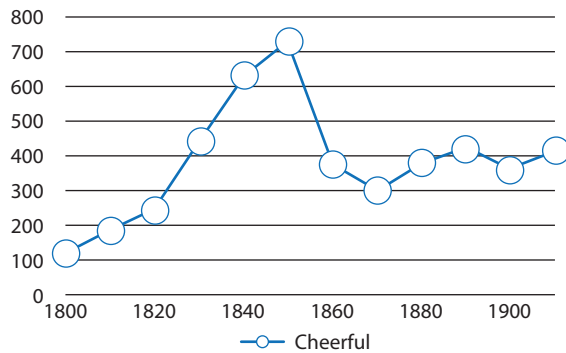
Recent research on masses of published books in the United States and Britain, during the 19th century, now allowing the application of data mining techniques, shows increased discussion of obedience early in the century, when new standards for children were being earnestly discussed, but then a pronounced decline in references, with the United States taking the lead. Obedient children were still convenient in some respects, and safety concerns ran strong when handling young children. But obedience increasingly took a back seat to the desire to have more cheerful and creative children. Again, American childrearing manuals by the 1870s reflected this intriguing reevaluation, as too much obedience and docility might now be regarded as unfortunate (see Figures 20.2 and 20.3) (Stearns, 2012a).

In contrast, interest in individualism in childhood increased. Where space permitted, by the later 19th century, parents were encouraged to have infants sleep in



**Figure 20.1** Relative frequency of obedience references, United States.

Source: Adapted from Google Books (American English) Corpus, <http://googlebooks.byu.edu>

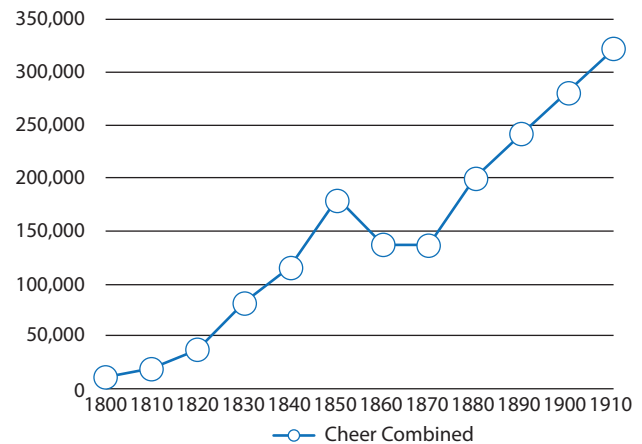


**Figure 20.2** Cheerful obedience, U.S. data.

Source: Adapted from Google Books (American English) Corpus, <http://googlebooks.byu.edu>

separate rooms, and gradually the idea of separate bedrooms for each child spread as well. The introduction of cribs, to allow young children to learn to sleep on their own but surrounded by protective devices, was a crucial innovation. New attention was given to children's birthdays, as an opportunity to mark their importance. At the other end of childhood, adult supervision over youth courtship declined. The introduction of the practice of dating, in the United States in the second decade of the 20th century, ushered in still further freedom for romantic activities among teenagers and young adults; chaperonage declined steadily (Bailey, 1989).

Change would continue in the Western world into the 20th century, as the implications of the structural shifts were further assimilated and as new levels of consumerism applied to children. It is also important to note that, around the turn of the 20th century, new thinking was also being applied to real or imagined problems of deviance.



**Figure 20.3** Cheer combined reference.

Source: Adapted from Google Books (American English) Corpus, <http://googlebooks.byu.edu>

Toleration of youthful pranks began to decline. Many young people in the urban working classes had increasing encounters with the police. Boys were most likely to face such issues, but attention to real or imagined sexual offenses among girls intensified as well. At the same time, Western societies increasingly moved toward the separate treatment of youthful offenders, under the heading of juvenile delinquency, to avoid contagion from adult criminals (Cauffman, Shulman, Bechtold, & Steinberg, Chapter 16, this *Handbook*, this volume). More broadly still, and aside from outright deviance, the introduction of the word and concept of adolescence marked a growing uncertainty about the teenage years, as schooling spread and, thanks to improved overall nutrition, the age of puberty dropped (Kett, 1978; Odem, 1995).



Individual societies introduced further specific changes. For example, growing concern about immigrants in the United States encouraged new types of testing in the early 20th century. Amid widespread assumptions about the inferiority of certain ethnic groups, it seemed vital to sort children by intelligence. Many children were tracked through IQ tests and similar measurements into separate educational programs, while encountering other forms of discrimination. European countries actually tracked children more rigorously, but they relied on achievement examinations more than assumptions about innate aptitude. Differences of this sort could have deep effects on children's lives.

### CHANGES IN NON-WESTERN SOCIETIES

The spread of industrialization outside the West, by the end of the 19th century, plus growing awareness of Western patterns, brought important changes to many other societies. In general, the structural changes that were developing in the West won wide attention, but many regions sought to introduce or maintain a different cultural balance in the area of qualitative change.

Japan provides an important case in point. As Japan embarked on its important reform era, the Meiji era, after 1868, it was immediately attracted to enhanced public health measures that would, among other things, cut into the traditional infant death rate. It also moved quickly to provide, and require, elementary education for both girls and boys, with a major act in 1872. Full implementation took some time, and there was (as had been the case in the West) important resistance to government requirements from some rural communities. But by the 1890s universal schooling was a reality, and further reform measures, limiting child labor, encouraged the transition as well (B. Platt, 2005; Stephens, 1991; Uno, 1999).

Reduction of the birth rate came somewhat more slowly, as families took some time to realize the implications of the new structures for childhood and as the government remained interested in abundant population resources. By the mid-20th century, however, Japan had completed the demographic transition, with low birth and child death rates, as well as the substantial conversion from work to schooling as the staple for childhood. The government began paying attention to children in other ways, from the early 20th century onward. It sponsored a series of publications designed to improve the quality of childrearing, holding that traditional methods were inadequate.

It introduced the concept of juvenile delinquency, ending longstanding practice of including children with adult criminals, another sign of a new recognition of childhood (B. Platt, 2005).

With all this, however, Japanese leadership also wanted to make sure that childhood remained Japanese. After a brief flirtation with Western ideas of individualism in the 1870s, the government introduced new emphasis on the importance of family and community, along with nationalism and a new level of emperor worship, in the 1880s. Already in 1879 an imperial memorandum for teachers insisted on "loyalty to the Imperial House, love of country, filial piety toward parents, respect for superiors, faith in friends... constitute the great path of human morality." Western individualism was explicitly attacked. Western nations were also preaching nationalism in their new mass education systems, but the Japanese did manage to infuse childhood with a different, more community- and peer-oriented set of values, along with the more standard changes introduced for children (Stearns, 1998b, p. 123).

From the 1920s onward, communist systems in various parts of the world experimented in different ways with combinations of structural changes and distinctive value systems. Very quickly after the 1917 Revolution, Russian communists expanded educational systems and requirements, including a network of nursery schools and kindergartens. Direct contact between government and children was a vital part of building a new society. Child labor was curtailed, although some work service requirements accompanied the formation of communist youth groups. The government also worked hard on public health, quickly driving down the infant death rate, which reached alarming proportions amid the chaos of war and revolution. By 1960 infant mortality had dropped 900% from 1918, to 3.5% of all children born (Balina & Dobrenko, 2009; Creuziger, 1996; Kelly, 2007; Kiaer & Naiman, 2006; Kirschenbaum, 2011; Pearson, 1990; Riordan, 1989; Vishneva-Sarafanova, 1984; Weaver, 1992).

As in Japan, birth rate reductions came a bit later, as the government wanted to encourage population growth. But individual Soviet families began reaching their own conclusions, by the 1930s, and family size dropped rapidly. Scarce housing added to school costs and the reduction of children's earnings to promote this facet of the demographic transition.

These structural changes were accompanied by a real effort to frame a childhood suitable for a communist society, combining new pressures (parental and governmental) for school success with, for example, a mastery of Marxism

and devotion to the state. Youth groups aimed similarly at indoctrination and solidarity. This case was not the conservatism of the Japanese approach, but it differed widely from Western models.

Communism in China, after the late 1940s, moved in similar directions. Schooling expanded rapidly. Public health measures, including the messages delivered by “barefoot doctors,” began to reduce child mortality, to 3.7% by 2003. In this case, the government famously moved in to reduce birth rates, from 1978 onward, with the “one child” policy and its rigorous enforcement. Here, again, was a case in which a revolutionary regime fairly quickly transformed agricultural childhood into a modern, industrial model. Like their Russian counterparts, the Chinese were also eager to make sure that children were freed from what they saw as the hand of backward tradition—notably Confucianism. Emphasis on science and technology, and Marxism, in the schools was part of this effort hand in hand with a wider attempt to teach children to dispute traditional etiquette and other markers of the past. Again, as in Russia, the result could be some significant tensions between children and their parents. Other measures added in, like a 1950 law that allowed young people to choose their own spouse, without parental consent (Bernstein, 1977; Chan, 1985; Chin, 1988; Hooper, 1985; Kirby, 1966; Lau, 1996; Nan, 2006; Power, 2005; Saari, 1990; Xu, 2002).

These structural changes were real and measurable—school attendance and literacy did rocket up—but some other measures met with less complete success. Schools might teach the importance of devotion to the communist struggle, but as one former student put it, “To tell the truth, we did not yet quite know what communism was.”

Changes were not confined to Japan and the communist societies. Turkey’s revolution from above, from the 1920s onward, emphasized the basic importance of schooling, and many other societies moved in the same directions. Ultimately, both structural changes and key aspects of regional distinctiveness in childhood folded into a larger pattern of global contacts and standards, particularly toward the later 20th century and thereafter.

## GLOBALIZATION AND CHILDHOOD

The variety of children’s situations remained considerable in the most recent historical experience. In many rural areas, particularly in societies where industrialization was not well advanced, children’s conditions continued in many

ways unchanged from agricultural patterns. Even basic schooling might be inaccessible, and even where inroads on child mortality occurred almost everywhere save amid war or famine, deaths rates might remain quite high.

Military conflicts continued to involve many children, both as victims and, through the phenomenon of child soldiers, as participants. Both wars and civil strife increasingly blurred boundaries between civilians and military. Deliberate attacks on children, to vent ethnic hatreds, were not uncommon. Many children also were displaced by conflict, filling refugee camps amid poor conditions. As many as 4% of all the world’s peoples have had to flee at some point during the past century, including at least 20 million children (Brett & Specht, 2004; Garbino, Kostelny, & Dubrow, 1991; Goodenough & Immel, 2008; Machel, 2001; Marten, 2001; Masten, Narayan, Silverman, & Osofsky, Chapter 18, this *Handbook*, this volume; Rosen, 2005; Schlemmer, 2000; Singer, 2006; St. John, 2008; Vincent & Sorenson, 2001).

Working conditions also deteriorated for some children. Global competition might put pressure on pay levels and safety, particularly on the part of local firms trying to withstand pressures from more modern corporations. At the end of the 20th century many governments also scaled back welfare measures, to save on taxes, which again affected children disproportionately. Many illegitimate children in Latin American slums had an increasingly difficult time hanging on. In some cases, as in some rug-making establishments in India, child workers were essentially kidnapped outright, forced to work 15 hours a day. Begging and street entertainments drew many children in the cities, and sexual exploitation almost certainly increased (Hecht, 1998; Seabrook, 2001). Other aspects of globalization prompted different types of change. By the later 20th century most governments were attempting to expand the core components of the modern structure of childhood, by extending schooling, working on public health measures that would press infant mortality down still further and, in some cases, promoting falling birth rates as well (Stearns, 2010). Globally, rates of child labor declined dramatically. By 2012, 44 million children under Age 14 were still at work worldwide, and for a time use of children actually increased in South and Southeast Asia, bucking the larger trends. Overall, however, children had comprised 6% of the total workforce in 1950, but by 1990 children represented only 3%. By 2004, 88% of all children of primary-school age were attending schools. In India itself, the 20 million children at work in 1999 had dropped to 12.6 million by 2008 (Larson, 2002; Larson, Wilson, & Rickman, 2009).

Many of these trends were further bolstered by the growing attention of international agencies to children's conditions, and a fledgling movement to define children's rights on a global scale. United Nations conferences worked to promote women's education and other measures that might improve care for children and also lower the birth rate (the correlation with women's education here was well established). The International Labor Office even as early as the 1920s sought to define rights to education and protection from work abuses. Communist countries took a lead in defining education as a children's right, but Western leaders like Franklin Roosevelt picked up similar rhetoric by the 1940s. Many nations signed pledges to end capital punishment for children, regardless of the crime. And although the United States held out against this measure, the Supreme Court in 2005 actually imposed a ban, citing international standards as one key motivation. Attempts to define children's rights more generally encountered heavy going. The United States worried that a ban on child labor would impede its use of migrant farmers. India also held out. Nevertheless a Convention on the Rights of the Child was issued in 1989, and most nations signed on: Its main provisions involved basic health standards, avoidance of abuse, access to education, and elimination of the harshest kinds of child labor. Global standards for children were rudimentary in some ways, and often violated, but there were some important areas of agreement, particularly on education, at least in principle (Guggenheim, 2005; Scheper-Hughes & Sargent, 1998).

Children's consumerism was another area reflecting new global influences, although amid great variety depending on rural versus urban residence and basic standards of living. Adults had purchased or offered items for children for millennia. Elite children in hunting and gathering societies were frequently buried with extra jewelry; Mayan toys for children showed great ingenuity; special adornment for children was a common part of social hierarchies in agricultural societies (Stearns, 2006). The more modern surge of consumerism in 18th-century Europe included new levels of purchasing for children, including books specially written for child audiences.

But it was in the later 19th century that spending on children really took off, initially in the advanced industrial societies of the West. Even infants were surrounded by purchased items, such as the teddy bears that made their debut early in the 20th century. Acquisitions at Christmas and for birthdays escalated steadily. Some concerns surrounded this new pattern—worries about making children too materialistic and greedy, or insufficiently creative. But

the push continued unabated. It was furthered as well by the new practice of giving children allowances, initiated in the United States in the 1890s. Various producers began to target children directly as consumers—for example, with cheap books and then comic books. Advertisers by the 1920s, using new technologies like the radio, also addressed children, both for items they might purchase directly and for more expensive items for which they could press their parents (Cross, 1997; Goodman, Peach, & White, 2003; Nightengale, 1995; Skelton & Valentine, 1998; White, 1994).

By the 1920s elements of this consumer pattern began to go global. Japanese consumers joined their Western counterparts in seeking special goods for children. By this decade the Japanese, along with Americans, provided a disproportionate number of new toys and games for children in the world market (Cross & Smits, 2005). Corporations like Disney, bent on selling entertainment to children and their parents, began to develop global outreach, although activities here became more extensive after World War II. By the 1960s fast-food restaurants with special appeals to children began their international ascent.

More than mere consumerism was involved in some of this outpouring. The idea began to develop that children and childhood should be happy. American childrearing literature, and some similar material in Britain, began to emphasize the importance of cheerful children during the 19th century, as part of the idealized picture of family life. Cheerfulness became a desirable character trait that good parents should both model and instill. But by the 1920s discussion in the prescriptive literature turned to happiness directly. Some authors argued that children were naturally happy, so all parents and educators had to do was avoid spoiling their positive outlook. But many materials expressed greater doubts about "natural" happiness, and urged that parents had a more active role to play. The sad child became a target of concern, possibly needing psychological intervention and certainly a reproof to parents. The urge to make children happy, promoted by purveyors of toys, foods, and entertainment, spread widely (Kotchamidova, 2005; Stearns, 2010).

Although the United States almost certainly developed this emphasis on children's happiness most widely, it proved exportable. Global commerce, touting goods made for children including, by the later 20th century, electronic games from Japan and masses of youth-oriented music, helped advance the concept. But as more societies emphasized schooling, and the desirability of rewarding children with happiness treats, and as more families

limited their birthrate and concentrated attention on one or two offspring, structural changes encouraged attention to happiness as well. Again headed by the United States, the movement even affected teaching styles, with schools urged to make learning fun, reducing conventional drudgery.

An interesting symbol of the new approach was the song “Happy Birthday,” which increasingly accompanied this special celebration of the individual child. The words were written in the United States in 1926, and became standard practice by the 1930s. After World War II the ditty was translated into most major languages. The idea of birthday parties, correspondingly, spread widely, particularly among middle-class families open to international influences. Shopping malls in Dubai sponsored birthday parties, promising “a truly memorable day for their children.” The birthday idea spread widely in Latin America and also in China, where the whole notion of calling attention to the child, rather than expressing gratitude to parents, was quite new. More widely, polls in India suggested that a growing minority of parents were coming to the belief that children can and should be happy (Miller, 1999; Riley, 2001; White, 2006). To some extent, then, elements of a new approach to children became global, or at least middle-class global, along with the structural changes in childhood that were spreading steadily.

As always, regional responses combined with global influences. A study in Lebanon showed how parents tried to combine some international messages about developing the individual child—pushed by United Nations agencies and also translated childrearing literature—with older emphases on the importance of the family unit and solidarity over individual interests (Christina, 2009; Cross & Smits, 2005; Fler, Hedegaard, & Tudge, 2009). Many families sought to balance some bows to children’s consumerism with more distinctive regional values. Japanese families embraced Disney parks, but used them differently from their American counterparts.

Changes in specific industrial societies were important as well. The huge influx of married women into the labor force, in the United States and Europe in the 1950s and 1960s, created new tensions for parents and children alike, particularly in the United States where daycare arrangements were less extensive and less acceptable than in Europe. While parental attention did not uniformly diminish—there were some impressive countermoves in many families, there is no questions that some older children were left to their own devices more often than before, and that peer cultures and media influences gained ground in this new context (Hernandez, 1995).

The importance of combining local and global in the recent history of childhood must be joined with attention to the downsides of some of the global patterns themselves. A number of societies, for example, began to face issues in the interaction between children and schooling. Children with attention problems began to draw notice as early as 1856, with a comment in Germany (Stearns, 2003). Research intensified in the 1920s, and full-blown definitions of attention deficit disorder followed, with American teachers and parents particularly eager to identify the condition and provide compensatory medication. Schooling raised different problems in Japan, where by the early 21st century several thousand schoolchildren were suffering from an ailment called *hikikomari*, or an inability to leave home and function adequately. In many countries, including the United States, Japan, and South Korea, youth suicides increased at an alarming rate, reflecting school pressures, family disorders including frequent divorce, and possibly the difficulty of expression sadness in cultures that emphasized the importance of good cheer (Stearns, 2011).

Obesity was another growing global issue among some children (Zuckerman & Keder, Chapter 15, this *Handbook*, this volume). With the United States well in the lead, growing minorities of young people became noticeably overweight, as they combined the ready availability of foods, and usually highly caloric snacks, sodas, and fast foods, with increasingly sedentary lifestyles not only in school but also in many video-based recreational pursuits (Vandell, Larson, Mahoney, & Watts, Chapter 8, this *Handbook*, this volume). Middle-class children in countries like China and India began to evince the problem, which called forth growing concern among agencies such as the World Health Organization. The classic problem of undernourishment for children had not ended, as massive child poverty persisted in many societies and new income inequalities raised issues even in affluent settings like the United States for a growing minority of children. But for the growing middle classes, the classic problem was virtually stood on its head, with changes in eating and activity patterns. Again, global changes in childhood were complex, the results clearly mixed (Bray, 2009).

## FUTURE OPPORTUNITIES IN THE HISTORY OF CHILDHOOD

Historians of childhood have covered considerable territory: We know a lot about various aspects of childhood in



the past and about connections between recent changes and current patterns. But of course there is more to do, in what is still a new field of inquiry.

The most obvious target involves the host of unresolved debates and uncovered topics. When the birth rate drops, do parental patterns of attachment change? Can we aspire to more than tentative historical work on patterns and changes in sibling relationships (a really important field, with one exception virtually untouched to date)? The list here is considerable, and there is every reason to encourage compensatory research.

A special aspect of the gap-filling effort involves more concerted efforts to deal with children's experiences directly, rather than concentrating so much on adult evaluations and perceptions. Wider attention to the use of artifacts and other materials emanating directly from childhood should pay off in future. A new approach to the history of education that focuses on evidence and activities from the child point of view is conceivable, at least for the modern period. Use of criminal and legal records—already underway with some of the histories of delinquency and “deviance”—is another way to get at inarticulate groups more directly. There also have been some interesting efforts in using oral history, although the filter of adult memory is very much involved in this genre (Hawes & Hine, 1991; Nelson, 2010; Prout, 2005). Newer techniques like data mining, suggested above, may also have some applicability to the effort to get at children more directly, although again most of the obvious data collections will come from adult authors (Stearns, 2012a). But the main point is clear: The history of childhood has a unique problem of sources, which should galvanize the imagination of historians in response.

The geographical invitation is obvious. Historians and researchers simply need to make more pioneering efforts to tackle regions and cultures vital in world history but dramatically underserved where studies of children and childhood are concerned. Further opportunities in comparative analysis will follow from a fuller set of regional studies. How different, in crucial past periods, were Islamic and Christian childhoods—overall, and around special topics, such as childhood sexuality, where in principle the two kindred religions had quite different approaches? A lot of open terrain remains here, in virtually every historical period including even the ramp-up to contemporary times (Zuckerman, 2010). More broadly, the combination of globalization and childhood, a natural topic for current history, involves the persistent need to balance wider trends and regional distinctiveness (based often in part on past

culture and institutions), and a wide geographical range in the history of childhood is essential here.

There is also a surprising gap between the excitement even of existing work on the history of childhood, and conventional history more generally. Most historians have not decided where to put the history of childhood or how to relate it to more common topics such as political history. Open a world history textbook and one will find, in the index, either no reference to children at all, or a single point about new educational measures in the 19th century. Yet, given the importance of children and childhood to individual and social life in the past, historians should be able to do better than this, to work children's history more directly into standard historical accounts rather than treating it as an esoteric offshoot. For example, can't the history of childhood be used to reach student audiences more directly, with historical issues and methods that touch them directly and that might draw them more readily into exposure to historical analysis? These represent some major discussions, and opportunities, for the future.

Historians must insist on the importance and ultimate relevance of many chronological phases of childhood history, and some of the great gaps and challenges certainly involve periods in the earlier human past. But the opportunity to deepen our understanding of modern changes and continuities, as a means of using the past to understand present patterns and complexities, remains vivid as well. Modern shifts in childhood, including the impact of new global connections, have been both fundamental and, in historical terms, quite recent, even in the societies the pioneered the first versions of modern childhood. It is small wonder that difficult adjustments continue, that adults and children alike continue to debate what childhood should entail, and that further change is inescapable in children's lives and in perceptions of childhood alike. The beauty of the history of childhood, for all is its debates, gaps, and complexities, is that it provides a roadmap of where human experience is coming from, as it barrels through the present on the way to the future.

Finally, there is the clear desirability of rekindling discussions about childhood's history and its uses with other disciplines. Some of the issues in childhood history—for example, the use of artifacts—can clearly be addressed more fruitfully through interdisciplinary conversations, some of which have already proved quite productive. Attention to the complex modern history of concerns about children's happiness, and their impact on actual children, invite discussions between developmental scientists and historians. And the list, here too, goes on. Historians are

interested in the history of childhood to improve their grasp of the past, but also to contribute to the wider understanding of what childhood is all about (Fass, 2007; Stearns, 2012b). For this purpose they need a wide audience, beyond the conventions of the discipline, but wide participation as well.

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## CHAPTER 21

# Assessing Bioecological Influences

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## INTRODUCTION

In its broadest sense, *ecology* is defined as "the science of the relations of the organism to the environment" (Stauffer, 1957, p. 140). A similar term, *context*, often used by developmental scientists, refers to: "any event or condition outside the organism that affects or is affected

by a person's development" (Bronfenbrenner & Crouter, 1983, p. 359). Common to both terms is the assumption that conceptualization and assessment of the environment (broadly conceived) is necessary if we are to understand development. Within this broad framework a number of modern contextual-ecologically based theories of human development have been formulated (e.g., Bronfenbrenner & Morris, 2006; Lerner, 2002; Magnusson & Stattin, 2006; Overton, 2010; Sameroff, 2009; Super & Harkness, 1999). These theories converge on a core of specific principles (Wachs & Shpancer, 1998). Core principles can be traced

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to a common intellectual history, rooted in the work of prior generations of ecologically or contextually oriented developmental researchers and theorists such as Roger Barker and Kurt Lewin (Bronfenbrenner & Crouter, 1983; Magnusson & Stattin, 2006), and include:

- The child's environment is complex, multidimensional and structurally organized into levels that are linked with each other.
- Development is multidetermined such that the contributions of person and environment, while necessary, are by themselves not sufficient when attempting to explain or understand development. Rather than studying individual and environment in isolation there needs to be simultaneous consideration of both person and environment.
- Person and environment are functionally linked: Environment influences children's characteristics, and children's characteristics, perceptions, and actions influence their environment. In this way children play an active role in their development.
- Change over time in the individual, the environment and the relation between individual and environment is the norm.
- Because of continuing bidirectional change over time in relations between individuals and their environment, development is probabilistic in nature.

While there is convergence across existing contextual-ecological theories on this core of key principles one distinct conceptual difference involves the question of whether the most appropriate unit of analysis for studying development is variable centered or person centered (Magnusson & Stattin, 2006). *Variable-centered* ecological theories (e.g., Bronfenbrenner & Morris, 2006; Elder & Shanahan, 2006), while emphasizing that development occurs *only* through the integrated contributions of person and ecological characteristics, view linkages between specific person and environmental elements as the fundamental unit of analysis for understanding development. In contrast, *person-centered* contextual theories (e.g., Brandstetter, 2006; Overton, 2006), view the holistic synthesis of person and context into an indivisible system as the fundamental unit of analysis. Comparisons of these two approaches have concluded that while holistic models are theoretically more elegant, variable-centered models are more easily translated into specific assessment tools or functional methodological procedures for studying development (Lawton, 1999; Van Speybroeck, 2000). Given that

a major emphasis of this chapter involves the application to development of the core principles specified above a variable centered ecological model was chosen as the conceptual framework for this chapter with specific reference to Bronfenbrenner's bioecological formula defining development as a *joint function of process  $\times$  person  $\times$  context  $\times$  time linkages* (PPCT; Bronfenbrenner & Morris, 2006).

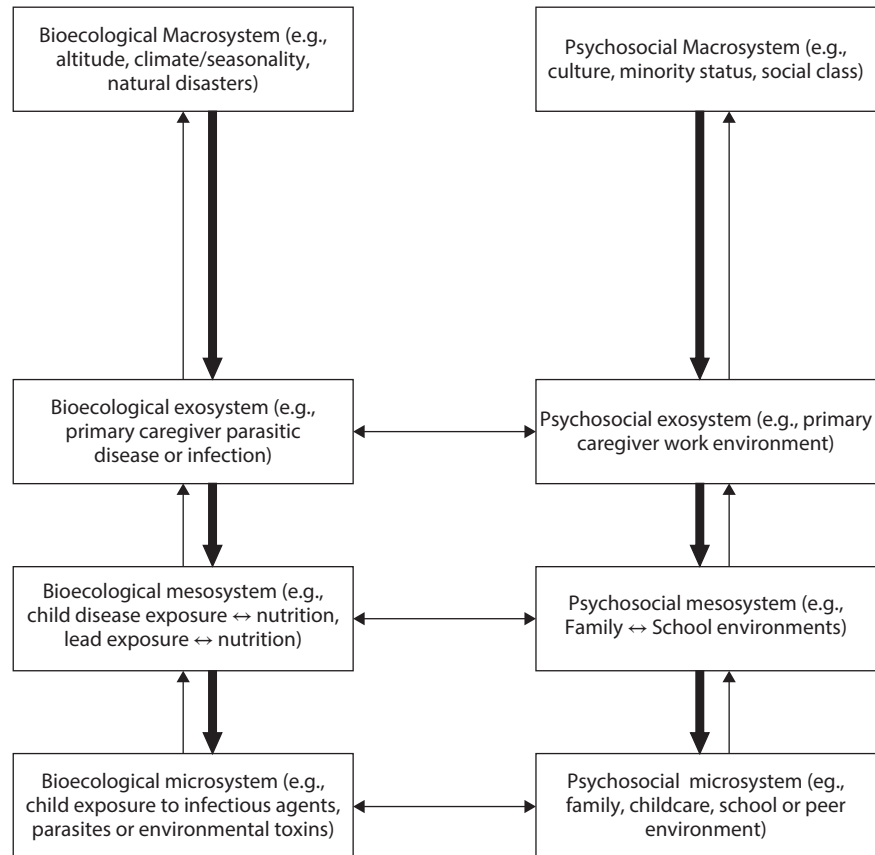
Using a PPCT conceptual framework five major issues will be considered: (1) the structure of the human ecosystem; (2) the major methodological implications of an ecological perspective in studying development; (3) how ecological characteristics influence development; (4) strategies for integrating process with person, context, and temporal characteristics; (5) applications of an ecological approach to promote development.

## STRUCTURE OF THE CHILD'S ENVIRONMENT

In both his initial (Bronfenbrenner, 1979) and later theorizing (Bronfenbrenner & Morris, 2006) Bronfenbrenner viewed the child's environment as a "nested" set of organized linked multidimensional elements (i.e., a system). An organized, linked set of elements possesses specific inherent properties (von Bertalanffy, 1968), one of which is that any system element has the potential to influence both the structure and impact of other elements in the system (Wachs, 2000). Hence, although the environmental structure described by Bronfenbrenner can be viewed as hierarchical in nature (see Figure 21.1), with lower-level elements nested within higher-order elements, no one level is predominant (Ungar, Ghazinour, & Richter, 2013). Rather than individual system elements what is most salient for understanding development is the nature of linkages, both within and between the different environmental levels described next.

### The Microsystem

At the lowest or innermost level, the *microsystem*, are patterns of interaction (*proximal processes*) between the child and his/her immediate physical (e.g., objects, inanimate stimulation) and social environment (e.g., parents, siblings, teachers). The microsystem also can encompass mass media such as TV or the Internet, given that information contained in these sources can promote children's cognitive and social-emotional development (e.g., *Sesame Street*: Mares & Pan, 2013) and help children conceptualize the nature of their world (Garbarino, 2001; also see Calvert,



**Figure 21.1** Integrated model of the bioecological and psychosocial environments.

*Source:* Adapted from "Expanding Our View of Context: The Bio-ecological Environment and Development, T. D. Wachs, 2003, in R. Kail (Ed.), *Advances in Child Development and Behavior*, Vol. 31, pp. 365–411, edited by R. Kail, New York, NY: Academic Press. Reprinted under STM permission guidelines.

Chapter 10, this *Handbook*, this volume). Structurally, the microsystem is heterogeneous in nature and the various dimensions of the microsystem are functionally linked. For example, the home environment of the child has both physical and social components (Wachs, 2000) and the nature of proximal parent-child interactions (the social microsystem) can vary depending upon the level of physical microsystem dimensions such as home chaos (Wachs & Corapci, 2003) and physical resources (Bradley, 1999).

### The Mesosystem

The microsystem is nested under the *mesosystem*, which is defined by linkages between different microsystems (Bronfenbrenner, 1979). While an analysis based on measurement of separate microsystems would reveal if there was an additive impact of multiple microsystems upon development such an analysis would tell us little about mesosystem influences. Understanding mesosystem

influences requires understanding the nature of mesosystem linkages (Ungar et al., 2013), which can be defined by four classes of linkage patterns (McIntosh, Lyon, Carlson, Everette, & Loera, 2008).

### Implied Linkages

The weakest form of mesosystem characterization involves implied linkages, as can occur when the same individual participates in two or more settings. Peer group and school characteristics can be viewed as an implied mesosystem link if the child and their peer group attend the same school (Card, Isaacs, & Hodges, 2008). Implied linkages can also be defined by statistical covariance between different microsystem settings. For example low-income families are more likely to have connections to other low income families than to high-income families (Jarrett, 1998). While implied linkages place the individual in multiple settings this placement tells us little about the nature of interconnections between the settings.



### Functional Linkages

The operation of functional linkages can be inferred when a child's presence in one microsystem is related to events in a second microsystem. A child's membership in a gang may be viewed as a functional mesosystem link to the family when gang membership weakens the influence of positive parental childrearing practices (Tolan, Gorman-Smith, & Henry, 2003). Research on child labor in low- and middle-income (LAMI) countries also illustrates functional linkages in terms of documenting how work conditions influence the child's attendance and performance in school (Dawes, Streak, Levine, & Ewing, 2012).

### Cognitive Linkages

Mesosystem linkages also can be cognitive in nature, as seen when the individual refers to events or information obtained from a different microsystem. One example of a cognitive linkage occurs when mothers discuss information received from people in their social-support network (McConnell, Breitreuz, & Savage, 2010). The Internet can also exemplify a cognitive mesosystem, as seen when adolescents refer to health related information obtained from web-based sources (Ybarra, Emenyonu, Nansera, Kiwanuka, & Bangsberg, 2008). To the extent that individuals describe specific events or knowledge cognitive linkages can highlight mechanisms underlying mesosystem influences.

### Structural Linkages

For structural mesosystem linkages to occur the extent and nature of cross-microsystem linkages must be specified. One example of a structural linkage is seen when parents report the extent of their involvement with various school activities such as attending a school event, or discussing their child's school progress with the child's teacher (McIntosh et al., 2008). Other examples include adolescent reports of the extent and nature of parental knowledge of their child's activities with peers (McIntosh et al., 2008) or parent reports on the amount of time spent on work related activities while at home (Schneider, 2009). At the neighborhood level structural mesosystem linkages may also be inherent in the operation of "collective efficacy" (Sampson & Raudenbush, 1997), when neighbors report working together to promote neighborhood improvement.

### The Exosystem

The *exosystem* is characterized by linkages between aspects of the environment the child does not directly encounter,

but which influence development through influencing lower level microsystem and mesosystem characteristics. Much of the research on exosystem influences has been carried out in western countries and is focused on three dimensions: parental social support networks, parental work environment, and neighborhood characteristics (for detailed reviews of neighborhoods as exosystems see prior reviews by Nicotera, 2007, and Sampson, Morenoff, & Gannon-Rowley, 2002; also see Leventhal, Dupéré, & Shuey, Chapter 13, this *Handbook*, this volume).<sup>1</sup> The exosystem also can include both actual and virtual settings, as seen when parents use computer technology to work from home rather than at their work place (Golden, 2012). In low and middle income (LAMI) countries there also has been study of bioecological exosystem influences such as access to or costs associated with public health care, schooling, electrification, sanitation facilities and caregiver exposure to environmental toxins or infectious agents (Engle, 2012; R. Mistry, Galal, & Lu, 2009).

When analyzing exosystem- microsystem linkages it is particularly important to recognize the *bidirectional* nature of this relationship. For example, in the interplay between parent work conditions and family functioning a standard exosystem analysis would involve assessment of the degree of work→family conflict, where work demands impinge on family functioning (e.g., Hsueh & Yoshikawa, 2007). However, there also is a bi-directional linkage pattern, as manifest in family→work conflict, when family responsibilities impinge on parent's work performance (Buehler & O'Brien, 2011).

### The Macrosystem

At the outermost level (the *macrosystem*) are overarching organized patterns of beliefs, values, customs, and living conditions (e.g., culture, social class). Macrosystem characteristics can be defined using broad unidimensional criteria such as the distinction between *individualistic cultures*, which emphasize individual autonomy, personal independence and personal goals, versus *collectivistic cultures*, which emphasize group goals, social harmony and a sense of obligation to others (Oyserman, Coon, &

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<sup>1</sup>As children get older and more involved in neighborhood activities there is conceptual justification for also viewing neighborhood as a microsystem. However, in this chapter, *neighborhood* is classified as an exosystem dimension given that neighborhood influences such as collective socialization function as aggregates rather than as specific proximal processes (Brody et al., 2001).

Kemmelmeier, 2002). A major concern with categorizing macrosystems using unidimensional criteria is that oversimplified conclusions can occur if there is significant intramacrosystem heterogeneity in the defining trait (Super & Harkness, 2010).

Alternatively, macrosystem patterns also can be defined based on theoretically based multidimensional categorizations that provide a detailed picture of underlying macrosystem processes, while simultaneously allowing for intra-system heterogeneity. An example of a multidimensional framework used to explain cultural influences is the “developmental niche” which encompasses three functionally linked domains: characteristics of the child’s physical and social *settings*; childcare customs and strategies for *rearing* children; parental *beliefs* about the nature of children, for example, what are desirable traits for a child to have, and what are the best ways to rear a child of a given age (Super & Harkness, 1999).

### The Chronosystem

Cutting across all of the four levels described above is the dimension of time (the *chronosystem*). In developmental research, the chronosystem is often viewed either in terms of the comparative salience of proximal processes occurring at different ages (e.g., critical or sensitive periods (Bornstein, 1989) or in terms of persons encountering macrosystem events at different ages (Elder & Shanahan, 2006). Bronfenbrenner and Morris (2006) also have emphasized that stability of facilitative proximal processes over time is essential for establishing long-term positive developmental trajectories. Chronosystem-macrosystem links can be seen when developmentally facilitative proximal processes are disrupted in families where there are high levels of income instability across time (Hill, Morris, Gennetian, Wolf, & Tubbs, 2013).

### Going Beyond Bronfenbrenner’s Ecological Structure

In understanding the structure of the environment it is important to recognize that the multiple levels described by Bronfenbrenner primarily describe the child’s *psychosocial environment*. Children and their caregivers also live in a *bioecological environment*, which is defined by multiple dimensions such as climate, natural hazards or disasters, environmental toxins, and available food sources (Wachs, 2003; also see Masten, Narayan, Silverman, & Osofsky, Chapter 18, this *Handbook*, this volume). As seen in Figure 21.1, the bioecological environment can be

described using the same multidimensional linked nested structure seen for the psychosocial environment (Wachs, 2003). Reflecting the person-environment link noted earlier Lawton (1999) also has proposed that there is a structured *subjective environment* that is parallel to and resembles the structures shown for the psychosocial environment. Taken as a totality the combined psychosocial, bioecological, and subjective environments comprise the child’s *ecosystem*.

### Ecosystem Structure: Summary and Conclusions

An important consequence of multiple linkages between different ecosystem levels is the probabilistic nature of development, given that the impact of influences from one level can be moderated by characteristics found at other linked levels. For example, childrearing by multiple caregivers (microsystem) may or may not adversely impact on the child depending upon cultural-macrosystem values (Weisner, 2010). Similarly, the impact upon children of work conditions for one parent (exosystem) may depend on how the other parent or partner deals with this situation (microsystem; R. Barnett & Gareis, 2007). Other examples of the probabilistic nature of development, resulting from *both* the hierarchical linked ecosystem and PPCT mechanisms, will be presented in later sections of this chapter.

## METHODOLOGICAL IMPLICATIONS OF A PPCT-BASED ECOLOGICAL FRAMEWORK

Besides serving as a theoretical foundation, the core principles presented earlier have three major implications for the formulation of research designs to study development.

### Studying Children in Real-World Situations

There is a long-standing emphasis in human ecological studies of conducting research in the real-world situations within which children and their families live (Bronfenbrenner, 1979; Wohlwill, 1973a).<sup>2</sup> Underlying this emphasis on conducting research in everyday settings is the issue of *ecological validity*: the degree to which the research setting incorporates essential ecosystem features normally encountered by the child (Schmuckler, 2001).

<sup>2</sup>A notable exception to the emphasis on real-world settings are studies coming from the Gibsonian ecological approach to understanding the contributions of perception to the emergence of basic skills, most of which are carried out under controlled laboratory conditions (e.g., Gogate, Walker-Andrews, & Bahrick, 2001).

### *The Ecological Validity of Laboratory Settings*

A common practice in research on microsystem proximal processes, such as parenting behaviors, is the use of laboratory-based assessments as the research setting (Kerig, 2001). The ecological validity of laboratory-based measurement of parenting can be assessed through comparing patterns of parent-child interaction in the home and in the laboratory. Comparisons typically show that while there are moderate correlations between home and laboratory assessments there also are more positive and fewer negative interaction patterns in the laboratory setting (Gardner, 2000; Goossens & Melhuish, 1996; Lindahl & Malik, 2001). In addition, relations between child age and parenting behaviors reported when out-of-home-assessments are used are not found when observations are done in the home (Zevalkink & Riksen-Walraven, 2001). One explanation for this pattern of findings is that the laboratory setting may not be representative of the totality of microsystem conditions in the child's home (Kerig, 2001). As a result mother-child interactions assessed in controlled laboratory settings may be measuring maternal or caregiver *competence* (what the mother or caregiver is capable of doing), whereas assessments done in naturalistic settings are more likely to reflect maternal or caregiver *performance* (what the mother or caregiver is normally doing when interacting with the child) (Goossens & Melhuish, 1996; Zevalkink & Riksen-Walraven, 2001).

### *Can the Real World Be Brought Into the Laboratory?*

Attempts have been made to design laboratory settings so they more closely represent real-world conditions. Reviews of both behavioral and biological evidence on the ecological validity of laboratory simulations of real-world situations either report inconsistent or limited relations between laboratory and naturalistic findings (Mori & Armendariz, 2001), or significant relations primarily when multiple laboratory assessments are utilized (Zanstra & Johnston, 2011). Given the complex multidimensional nature of the child's proximal environment this pattern of findings is not surprising. Representativeness of laboratory microsystem research findings will be limited by the degree to which interactions are setting dependent and the degree to which proximal processes and conditions that influence development in the child's natural ecological setting are missing or cannot be simulated in laboratory assessments (Lerner, Dowling, & Chaudhuri, 2005).

### *Do Studies Carried Out in Real-World Settings Guarantee Ecological Validity?*

Doing naturalistic observations of the child's ecosystem does not necessarily guarantee ecological validity given that the ecological validity of real-world assessments can be compromised by the methodological procedures used. The most obvious threat to ecological validity is the presence of an observer changing normally occurring behaviors, particularly when using overt recording procedures such as videotaping (Gardner, 2000) or when observations are carried out in cultural settings where it is not common to see strangers (Super & Harkness, 1999). The ecological validity of naturalistic observations also can be compromised when observational procedures disrupt normally occurring microsystem conditions, such as asking that the television be turned off during the observation (Masur & Flynn, 2008) or requiring that all family members be within camera range when observations are videotaped (Lindahl & Malik, 2001). Representativeness of naturalistic findings may also be questioned when a single brief observation period is used, given that findings can vary depending on when during the day an observation takes place and who is present (Leyendecker, Lamb, & Scholmerich, 1997; Raudenbush & Sampson, 1999).

Ecological validity also can be compromised when statistical control procedures such as covariance are used to allow identification of the "unique" predictor. By holding multiple predictors constant covariance procedures eliminate any role for existing complex configurations of predictors or the possibility that the impact of a specific predictor may vary depending on higher order ecological features (Gorman-Smith, Tolan, & Henry, 2000; Sampson et al., 2002). One consequence when statistical controls are used is that overly parsimonious predictor models may result, which will not yield a true picture of how existing ecological conditions translate into developmental variability (Jaffee, Caspi, Moffitt, Polo-Tomas, & Taylor, 2007).

### *Issues in the Use of "Social Address" Assessments*

Historically, initial approaches to conceptualizing the role of the ecosystem in developmental research were based on comparing the performance of children living at different social addresses (e.g., different socioeconomic status [SES] groups, different cultures, rural versus urban settings; Bronfenbrenner & Crouter, 1983). From a

developmental-ecological viewpoint there are two major problems with the use of social address measures.

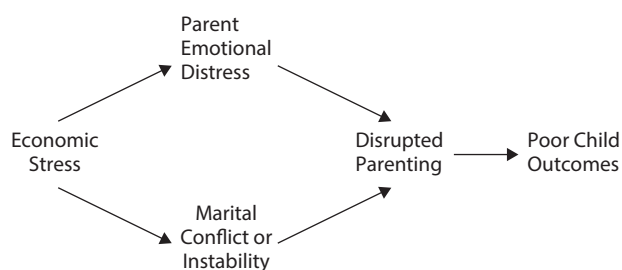
### *Social Addresses Do Not Identify What Influences Development*

Social address measures such as poverty or low SES summarize a host of covarying bioecological and psychosocial developmental influences into a single term (J. Chen, Hetzner, & Brooks-Gunn, 2010; Engle & Black, 2008). All too often this leads to the oversimplified conclusion that the social address itself produces the adverse developmental consequences. In contrast, within a developmental-ecological framework, multiple proximal psychosocial and bioecological characteristics, nested under the social address label are the primary drivers (mediators) of development (Bradley & Corwyn, 2002; Conger & Donnellan, 2007; Huston & Bentley, 2010). For example, differences between cultures in the number of school grades completed may reflect the influence of cultural values about education, availability of schools or the level of gender discrimination. To understand what underlies social address differences it is necessary to go beyond comparing outcomes associated with social addresses, such as poverty or culture, and focus on identifying proximal mediating mechanisms linked to the social address (J. Chen et al., 2010; Super & Harkness, 2010).

Illustrating this point is evidence from both high income (Bradley & Corwyn, 2002; Evans, 2004; Hackman, Farah, & Meaney, 2010) and low- and middle-income (LAMI) countries (Wachs & Rahman, 2013; S. Walker et al., 2011) documenting that two major consequences of growing up under the social address of poverty are (1) higher levels of exposure to biological and psychosocial risk factors that act to inhibit development; and (2) lower exposure to promotive influences that can enhance development or to protective factors that can promote resilience for children exposed to psychosocial or bioecological risks. By breaking down the social address label of poverty researchers have identified specific bioecological and psychosocial mediators in high-income and LAMI countries through which poverty translates into compromised child development. Identified risk mediators include (but are not limited to):<sup>3</sup>

- Preterm birth or intrauterine growth retardation (Hackman et al., 2010)
- Reduced cognitive stimulation (Bradley & Corwyn, 2002; Chen et al., 2010; S. Walker et al., 2011)
- Reduced access to preschool programs or schooling (Engle, 2012)
- Insufficient nutrition (S. Walker et al., 2011) or household food insecurity (Metallinos-Katsaras, Gorman, Wilde, & Kallio, 2011)
- Exposure to environmental pollutants crowding and physical dangers (Evans, 2004)
- Reduced neighborhood cohesion (Gorman-Smith et al., 2000)
- Maternal depression (Wachs & Rahman, 2013)
- Exposure to infectious agents (S. Walker et al., 2011)
- Lack of access to clean water or sanitation (Sheuya, 2008)
- Social exclusion (Engle, 2012)

An example of the process through which multiple risk factors mediate the impact of social addresses is shown in Figure 21.2. The pathways shown in this figure are based on a consistent set of findings involving European American and ethnic minority families living in the United States (Conger & Donnellan, 2007), which document that two major consequence of family economic hardship are increased parental stress (Evans & Kim, 2013; McConnell et al., 2010) and parental emotional problems such as depression (Conger & Donnellan, 2007). Both increased parental stress and increased parental emotional problems result in reductions in effective parenting, emotional involvement with offspring and quality of the marital



**Figure 21.2** Impact of economic stress on families and children.

Source: Figure based on “An Interactionist Perspective on the Socioeconomic Context of Human Development,” by R. Conger and M. Donnellan, 2007, *Annual Review of Psychology*, 58, pp. 175–199. Reprinted under STM permission guidelines.

<sup>3</sup>Listings of PPCT factors that produce resilience in children are found in Masten and Obradović (2006), and Ungar et al. (2013).



relationship, which in turn adversely impact on offspring development.

In interpreting the above findings there are two important caveats. The first is that no single mediator offers complete explanatory power (Hackman et al., 2010; Wachs, 2000). The second, consistent with the *specificity principle* (Wachs, 2000), is that the contribution of specific predictors varies depending on what outcome is assessed (e.g., different mediators are found for cognitive versus social-emotional outcomes: Yeung, Linver, & Brooks-Gunn, 2002).

### ***Social Addresses Cannot Easily Explain Intra-Address Variability***

Because they homogenize multiple developmental influences into a single term, social addresses often are not reflective of actual ecosystem variability. Even when different neighborhoods are classified as being at the same SES level they can vary significantly on extent of neighborhood violence, availability of resources, degree of social organization, parental childrearing strategies, and levels of social cohesion (Gorman-Smith et al., 2000; Jarrett, 1998; McGroder, 2000; Odgers et al., 2009). Similar concerns about intra-address ecological variability have been raised for other social address domains such as ethnic group membership (Leyendecker, Harwood, Comparini, & Yalçinkaya, 2005) and culture (Super & Harkness, 1999). Intra-address variability makes it difficult to explain significant outcome variability among children living at a given social address.

### ***The Role of Social Addresses in a Developmental-Ecological Framework***

The above findings emphasize the need to go beyond social address as explanation and identify the specific ecosystem mediators that define pathways linking social addresses to development. However, going beyond social addresses does not necessarily mean ignoring the measurement of social addresses. Linking social addresses to outcomes can be a useful starting point for identifying potential proximal causal influences when information is available on specific risk or protective factors associated with a given social address (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001). Further, macrosystem social addresses are important for answering public policy questions, such as whether government funding for nutrition programs reduces the level of food insecurity in lower income groups. Finally, as discussed later in this chapter, social addresses can function as an important moderator of proximal processes. (Also

see Duncan, Magnuson, & Votruba-Drzal, Chapter 14, and McBride Murry, Hill, Witherspoon, Berkel, & Bartz, Chapter 11, this *Handbook*, this volume.) For example, normally effective developmental intervention strategies may have only limited utility in highly disadvantaged resource depleted countries (Wachs & Rahman, 2013). Other examples of moderation processes are seen in the following sections.

### **Considering Both Environment and Experience**

Developmental-ecological theorists differentiate the objective (actual) *environment* (measurable external stimulation encountered by the individual: environment as it is) from subjective *experience* (how the stimulation is viewed or interpreted by the individual: environment as perceived (Bronfenbrenner, 1979; Lawton, 1999; Magnusson & Stattin, 2006). Illustrating this distinction, neighborhood can be studied as “environment” (defined by objective physical-structural features) or as “place” (defined by how residents view or experience their neighborhood; Nicotera, 2007). Although these terms are often used interchangeably, and the individual’s experience often reflects the nature of their environment, they are not necessarily the same. For example, adolescents’ reactions to social exchanges with peers (environment), varies depending on how they interpret social cues (experience) (Fontaine & Dodge, 2009).

Within a PPCT framework a major implication of the distinction between environment and experience is that studying proximal and contextual contributions to development requires going beyond the objective environment. At the microsystem level children’s perception or interpretation of proximal processes in their family or school may be a particularly critical and unique influence on their behavior and development (Brody et al., 2001; Bronfenbrenner & Morris, 2006; Dodge & Pettit, 2003). At the exosystem level child and adult perceptions of their neighborhood have been shown to mediate the influence of objective measures of neighborhood characteristics (Brody et al., 2001; Shumow, Vandell, & Posner, 1998; Tolan et al., 2003). Similarly, the belief that social support will be available when needed may be a particularly salient protective exosystem influence (Coventry, Gillespie, Heath, & Martin, 2004; B. Gottlieb & Bergen, 2010). The distinction between environment and experience is critical when conceptualizing mechanisms underlying the role of person characteristics in a PPCT framework, as discussed later in this chapter.

## THE PPCT MODEL: BRINGING HIGHER ORDER CONTEXT INTO THE STUDY OF PROXIMAL PROCESSES

Proximal processes are defined as direct transactions between the child and microsystem elements (Bronfenbrenner & Morris, 2006). There is a large body of evidence relating children's development to a variety of microsystem proximal processes including parenting practices, child-care characteristics, school experience and peer group interactions (for reviews of these areas see Bornstein, Chapter 3; Rubin, Bukowski, & Bowker, Chapter 5; Burchinal, Magnuson, Powell, & Soliday Hong, Chapter 6; and Crosnoe & Benner, Chapter 7, this *Handbook*, this volume). Given this degree of coverage direct connections between proximal processes and development will not be reviewed here. Rather, the focus in this chapter will be on developmental implications of links between proximal processes and the dimensions of context, person, and time.

Proximal processes are considered to be the primary driving force for development (Bronfenbrenner & Morris, 2006). However, because all ecosystem levels are interconnected the contributions of microsystem proximal processes cannot be fully understood without taking into account contributions from other ecosystem levels (Bronfenbrenner & Morris, 2006; Lerner et al., 2005). There are four potential mechanisms through which the linkage between higher-level contextual dimensions and lower-level proximal processes translates into developmental outcomes (Wachs, 2000). The first, *mediation* of the influence of higher level contextual characteristics by microsystem proximal processes, has been discussed earlier in the section on use of social address models. The three remaining mechanisms are (1) *higher levels structuring* the nature of lower level ecosystem characteristics; (2) *higher levels moderating* the extent and nature of influences from lower ecosystem levels; and (3) *influences from lower levels moderating* the extent and nature of higher-level contextual influences.

### Top-Down Structuring

Through structuring the nature of lower order proximal processes higher-order ecosystem dimensions *indirectly* contribute to development. Much of the available research involves higher-order psychosocial structuring by two macrosystem contexts, *culture* (including ethnic group membership) and *poverty* and by two exosystem contexts, *work conditions*, and *neighborhoods*. Other higher order

dimensions that have been shown to influence microsystem characteristics include:

- Societal violence (S. Walker et al., 2011)
- Natural disasters (Engle, 2012)
- Built structures such as new roads in rural regions (Axinn & Yabiku, 2001)
- Increased urbanization (Grimm et al., 2008)
- Mass migration of parents from rural to urban areas (Wen & Lin, 2012)

In addition, as seen in Figure 21.1, higher order levels of the bioecological environment, as manifest in climatological change, can structure lower level bioecological characteristics such as level of child exposure to parasites, disease agents, or food availability (Sheffield & Landrigan, 2011).

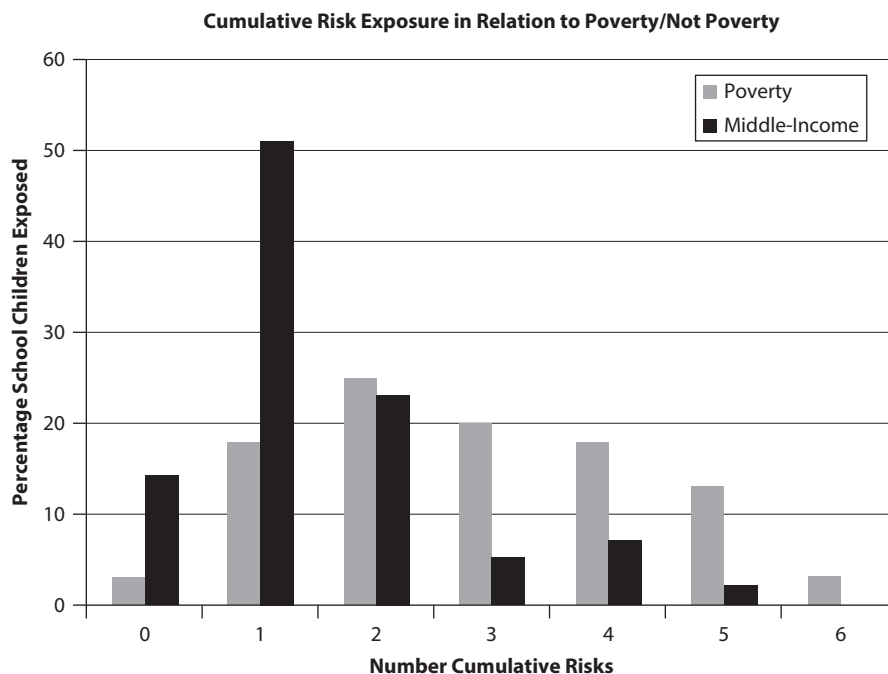
Going beyond higher order structuring of the microsystem, and consistent with a PPCT framework, there also is suggestive evidence that being reared in an urban environment may alter individual person biological characteristics such as neural structures and connections underlying individual differences in stress reactivity (Lederbogen et al., 2011). In addition, culture also provides expectations of ages when specific developmental transitions or behaviors should occur ("cultural scripts"; Brandstetter, 2006). Societal violence can disrupt the individual's ability to meet culturally defined chronosystem-linked activities, such as marriage or forming a family by a certain age (Barber, 2013).

### Cultural Structuring

Characteristic belief systems of a given culture are used by parents to construct ideas of what is appropriate parenting and how children develop (*ethnotheories*). Parental ethnotheories in turn structure parenting behaviors (Super & Harkness, 2010). Evidence shown in Table 21.1 illustrates the various ways in which culture influences parental beliefs, expectations and childrearing practices (also see Goodnow & Lawrence, Chapter 19, this *Handbook*, this volume). Cultural characteristics also can structure non-family microsystem and exosystem characteristics in ways that can adversely influence development. One example illustrated in Table 21.1 is culturally driven ethnic or racial discrimination (also see by McBride Murry, Hill, Witherspoon, Berkel, & Bartz, Chapter 11, this *Handbook*, this volume). The impact of discrimination may be particularly strong in cultures where racial or ethnic discrimination has been institutionalized (Cueto, Guerrero, Leon, Seguin, & Munoz, 2012) or for ethnic groups that have been forced into refugee status (Mann, 2012).

TABLE 21.1 Structuring of lower-order ecological features by higher-order contextual characteristics

Higher-Order Contextual Dimensions	Lower-Order Ecological Dimensions	Structuring
Culture	Parental rearing	Culture influences parental beliefs, expectations, childrearing practices, and involvement (Bradley, 2004; Leyendecker et al., 2005; Parke et al., 2004; Super & Harkness, 1999). Culture influences the nature of parental and peer reactivity to child temperament characteristics (X. Chen, Yang, & Fu, 2012).
Ethnic discrimination or social exclusion	Availability of resources	Ethnic minority children and/or their families are more likely: <ul style="list-style-type: none"> <li>• To be living in poverty (Hill &amp; Witherspoon, 2011).</li> <li>• To encounter barriers to upward mobility (Engle, 2012; Roscigno, 2000).</li> <li>• To be concentrated in low-income/low-resource neighborhoods with reduced access to affordable goods and services (Leventhal &amp; Brooks-Gunn, 2000; Roscigno, 2000; Sampson &amp; Raudenbush, 1997).</li> <li>• To attend lower-quality schools (Roscigno, 2000).</li> </ul>
Poverty	Nonfamily resources	Low SES/poverty: <ul style="list-style-type: none"> <li>• Increases the probability of children attending low quality schools (Leventhal &amp; Brooks-Gunn, 2000; Huston &amp; Bentley, 2010; Roscigno, 2000).</li> <li>• Increases the concentration of children with low literacy skills in schools in low-income neighborhoods (Aikens &amp; Barbarin, 2008).</li> <li>• Weakens mesosystem connections between parents and schools (Hertzman, 2010).</li> </ul>
Poverty	Neighborhood characteristics	Low-income families are more likely to live in neighborhoods with higher levels of risk and lower resource levels (Leventhal & Brooks-Gunn, 2000; Roscigno, 2000; Sampson & Raudenbush, 1997). Economic recession can change community characteristics through population migration (Hertzman, 2010).
Poverty	Parenting and family characteristics	Low-SES/poverty increases the probability of children being reared in homes characterized by: <ul style="list-style-type: none"> <li>• Less-positive parenting (Conger &amp; Donnellan, 2007; Simons, Johnson, Conger, &amp; Lorenz, 1997).</li> <li>• Lower cognitive and language stimulation (Bradley &amp; Corwyn, 2002; Huston &amp; Bentley, 2010).</li> <li>• Higher levels of marital conflict (Conger &amp; Donnellan, 2007; Parke et al., 2004).</li> <li>• Parents who are less likely to help their children make appropriate educational choices (Lucas, 2001).</li> </ul>
Poverty	The bioecological environment	Poverty is associated with increased exposure to bioecological microsystem risk conditions such as: <ul style="list-style-type: none"> <li>• Inadequate nutrition.</li> <li>• Exposure to disease agents and/or environmental toxins, poor sanitation, and unsafe drinking water.</li> <li>• Inadequate housing (Bradley, Chapter 12, this <i>Handbook</i>, this volume; Evans, 2004; Sheuya, 2008; S. Walker et al., 2011).</li> </ul>
Neighborhood violence	Parenting	In high-violence neighborhoods: <ul style="list-style-type: none"> <li>• Parents are more likely to use harsh restrictive discipline and/or more monitoring (Leventhal &amp; Brooks-Gunn, 2000).</li> <li>• There is an increased risk of violence and verbal aggression in the home (Leventhal &amp; Brooks-Gunn, 2000; Pettit, Bates, Dodge, &amp; Meece, 1999).</li> <li>• There is greater preparation of ethnic minority children to expect and prepare for bias (Hughes et al., 2006).</li> </ul>
Neighborhood violence	Schools	School educational climate is compromised when schools are in high crime-delinquency neighborhoods (Roscigno, 2000).
Neighborhood disorganization/disorder	Parenting	In highly disorganized neighborhoods there is a higher probability of: <ul style="list-style-type: none"> <li>• Harsh discipline and child abuse (Fauth, Leventhal, &amp; Brooks-Gunn, 2007; Leventhal &amp; Brooks-Gunn, 2000).</li> <li>• Lower levels of parental monitoring and effective parenting (Barber, 2001; Fauth, Leventhal, et al., 2007; Simons et al., 1997).</li> <li>• “Spillover” effects when risk factors from one neighborhood impact on children and families living in a geographically adjoining neighborhood (Leventhal &amp; Brooks-Gunn, 2000; Sampson et al., 2002).</li> <li>• Mothers being less likely to take their children to parks and playgrounds or read to or play with their children (Frech &amp; Kimbro, 2011).</li> </ul>
Neighborhood resources	Child out-of-home activities	Greater accessibility of neighborhood resources related to more child involvement in nonschool neighborhood activities (Urban, Lewin-Bizan, & Lerner, 2009).



**Figure 21.3** Living in poverty increases exposure to cumulative bioecological and psychosocial risks.

Source: Figure reprinted from “The Environment of Childhood Poverty,” by G. Evans, 2004, *American Psychologist*, 59, pp. 77–92. Reprinted under STM permission guidelines.

### ***Economic Structuring—Poverty***

As shown in Figure 21.3 and Table 21.1, poverty conditions can increase the chances of children being exposed to proximal microsystem psychosocial and bioecological risk factors (also see Bradley, Chapter 12, and Duncan, Magnuson, & Votruba-Drzal, Chapter 14, this *Handbook*, this volume). As also shown in Table 21.3 living in poverty can reduce the chances of exposure to protective factors such as high resource schools.

### ***Exosystem Structuring by Work Characteristics***

Maternal employment outside of the home is associated with maternal childrearing styles (Buehler & O’Brien, 2011; Hadzic, Magee, & Robinson, 2013). Job characteristics such work overload, work stress, and variable or nonstandard work shifts have been linked to disruption of family functioning (Strazdins, Clements, Korda, Broom, & D’Souza, 2006), increased marital tensions (Hsueh & Yoshikawa, 2007; Repetti & Wang, 2010) increased hostile parenting (Strazdins et al., 2006) and reductions in parental school involvement (Waanders, Mendez, & Downer, 2007; G. Wright & Smith, 1998). In addition, work characteristics such as complexity and need for self-direction can influence parental value systems (Repetti & Wang, 2010).

### ***Exosystem Structuring by Neighborhood Characteristics***

As also seen in Table 21.1, neighborhood risks and resources can structure the nature of the child’s microsystem (also see Leventhal et al., Chapter 13, this *Handbook*, this volume). Illustrating the role of the subjective ecosystem (Lawton, 1999) structuring of parenting practices or child peer network can occur as a result both of objective neighborhood characteristics (e.g., crime rate) and/or subjective parental perceptions of neighborhood problems or neighborhood safety (Card et al., 2008; Tolan et al., 2003). Low neighborhood resources (e.g., lack of public transportation), disorganized and disorderly neighborhood conditions, or concerns about neighborhood safety also can reduce the extent of mesosystem connections such as parental school involvement (Barber, 2001; Waanders et al., 2007) and parental social support networks (Simons et al., 1997).

### ***Higher-Order Moderation***

Moderation occurs when the association between a specific ecosystem feature and development varies, depending on the presence or level of another ecosystem feature. Conceptually, moderation can be viewed as a fundamental



process underlying development (Magnusson & Stattin, 2006); empirically moderation is traditionally defined by a statistical interaction between two or more predictors (Whisman & McClelland, 2005).

### *Moderation by Culture*

Developmental-ecological theorists have hypothesized that cultural characteristics can moderate the impact of lower-level proximal processes (Bronfenbrenner & Morris, 2006; Weisner, 2010) through providing the meaning systems and symbols by which individuals interpret their everyday experiences (J. Mistry & Wu, 2010). At present evidence on the validity of the cultural moderation hypothesis is mixed. Some studies have shown that the contributions of proximal processes to child cognitive or social-emotional development varied depending on *cultural background* (e.g., Feldman & Masalha, 2007; Slone, Shechner, & Farah, 2012) *country of origin* (e.g., Cabrera, Shannon, West, & Brooks-Gunn, 2006) or *family ethnicity* (e.g., Burchinal, Peisner-Feinberg, Pianta, & Howes, 2002; Dodge & Pettit, 2003; Halgunseth, Ispa, & Rudy, 2006; Whaley, 2000). Consistent with a PPCT framework there also is evidence suggesting that ethnic group membership (Latino/a versus European American) moderates adolescents level of neural activation in response to having to choose rewards for themselves or for their family (Fulgini & Telzer, 2013).

In contrast, other studies report similar cross-cultural patterns of associations between:

- Child behavior problems and parental use of physical discipline (Gershoff et al., 2010), parental rejection (Rohner & Britner, 2002) or level of home chaos (Shamama-tus-Sabah, Gilani, & Wachs, 2011).
- Early cognitive stimulation and children's cognitive development and academic achievement (Bradley & Corwyn, 2005).
- The impact of *Sesame Street* on children's cognitive and social-emotional competence (Mares & Pan, 2013).
- Developmental risk or protective factors and child outcomes across different ethnic groups (Evans, Lepore, & Allen, 2000; Parke et al., 2004).

It is unclear if inconsistent or nonsignificant cultural moderation effects reflect insufficient statistical power with multiple groups, the heterogeneous nature of social addresses such as culture or the operation of specificity processes. Exemplifying specificity processes Deater-Deckard et al. (2011) have reported that a positive

association between child adjustment and measures of *parental warmth* is seen across multiple cultures whereas patterns of association between child adjustment and *parental control* strategies vary depending upon culture.

### *Moderation by Neighborhood Characteristics*

It has been hypothesized that in higher resource neighborhoods the adverse developmental impact of children's exposure to high-risk proximal processes will be reduced (Tolan et al., 2003). Studies supporting this hypothesis illustrate how the negative impact of proximal risk factors such as association with antisocial peers, lack of after-school adult supervision, insensitive parenting or being a victim of child abuse are *attenuated* for children from neighborhoods higher in:

- Collective socialization (Brody et al., 2001)
- Safety (Pettit et al., 1999)
- Social cohesion and informal social controls (Jaffee et al., 2007)
- Supportive social networks (Gorman-Smith et al., 2000)

The findings in this list come from studies done in high-income countries. The buffering effect of positive neighborhood characteristics also occurs in LAMI countries, as seen in evidence that the postconflict depression of children forced into combat as child soldiers was lower for those whose communities were more accepting of such children (Betancourt et al., 2010).

In contrast to these supportive findings other studies on the hypothesized neighborhood buffering of proximal risk factors have shown either *nonsignificant findings* (DuMont, Widom, & Czaja, 2007) or *complex patterns of findings* with no clear interpretation (Fauth, Roth, & Brooks-Gunn, 2007; Sheidow, Gorman-Smith, Tolan, & Henry, 2001). In evaluating the overall inconsistent pattern of findings it is important to consider the possibility that definitions of what is a proximal risk factor may vary depending on neighborhood characteristics. Illustrating this possibility is evidence that high levels of harsh parental control (traditionally considered as a risk factor) may promote adolescent adjustment in high-risk neighborhoods but have the opposite effect in low risk neighborhoods (Leventhal & Brooks-Gunn, 2000). In addition, there is evidence suggesting the operation of specificity, with level or patterns of neighborhood moderation of proximal processes varying depending on outcomes assessed (Gorman-Smith et al., 2000). Finally, there is evidence illustrating higher-order moderation of neighborhood  $\times$  proximal process interactions by

chronosystem characteristics such as child age (Odgers et al., 2009).

Based on evidence that high levels of exposure to developmental risks can swamp protective influences (Sameroff & Rosenblum, 2006; Ungar et al., 2013) a second hypothesis is that *high-risk neighborhoods will overwhelm interventions designed to positively influence development*. Although there are fewer studies the evidence in support of this second hypothesis is more consistent. Studies have shown that the positive impact of facilitative microsystems such as quality parenting, high parental involvement, cognitively stimulating homes, school-based interventions, or availability of child-centered community activities were significantly weaker when neighborhoods were characterized as:

- More disorganized (Gorman-Smith et al., 2000)
- More disadvantaged (Leventhal & Brooks-Gunn, 2000; Metropolitan Area Child Study Research Group, 2002)
- Higher in crime and violence (Fauth et al., 2007)

#### Moderation by Lower-Order Proximal Processes

Evidence cited above illustrates that neighborhood characteristics can moderate the influence of proximal processes. The *bidirectional* nature of moderation processes is illustrated by studies showing how proximal family or parental characteristics can moderate the detrimental consequences for children living in disorganized, disadvantaged or violent neighborhoods (Brody et al., 2001; Huston & Bentley, 2010; Leventhal & Brooks-Gunn, 2000; Pettit et al., 1999; Roosa, Jones, Tein, & Cree, 2003; Shumow, Vandell, & Posner, 1999). Family or parenting characteristics identified as attenuating the detrimental impact of living in a high-risk neighborhood include:

- Maternal mental health
- Parental disciplinary strategies
- Restricting who the child is allowed to play with
- Active parental monitoring of the child's activities
- Choosing what school the child is enrolled in
- Consistent family routines
- Involvement with kin networks rather than neighbors

However, moderation of neighborhood risk by proximal processes may not be total given that positive family influences can weaken but not eliminate the negative impact of living in a high risk neighborhood (Gorman-Smith et al., 2000; Leventhal & Brooks-Gunn, 2000).

Proximal moderation of higher-level ecosystem characteristics is not restricted just to the neighborhood. Positive

or negative parental and family characteristics also can accentuate or attenuate the detrimental impact of: *economic adversity* (Kim-Cohen, Moffitt, Caspi, & Taylor, 2004), *exposure to societal violence* (Barber, 2001; Lustig et al., 2004; Slone et al., 2012) or *ethnic discrimination* (Brody et al., 2006).

#### Summary Conclusions: Context and Proximal Processes

Higher-order ecosystem dimensions can both structure and, in the case of neighborhoods, moderate the impact of lower order proximal processes. However, moderation is *bidirectional* in that proximal processes can, in turn, moderate the impact of a variety of higher order ecosystem dimensions. The operation of bidirectional moderation between different ecosystem dimensions highlights the importance of viewing ecosystem influences as a relational synthesis of multiple elements rather than as isolated contributions from different dimensions (Overton, 2010). Major tasks for future PPCT based research are (a) accurate mapping of the various pathways linking multilevel ecosystem dimensions; and (b) identification of the specific mechanisms underlying cross-level shaping and moderation.

### THE PPCT MODEL: INTEGRATING PERSONS INTO THE STUDY OF PROXIMAL PROCESSES

In the developmental sciences person characteristics such as personality or intelligence are traditionally viewed either as an outcome or as a main effects predictor, as in studies relating individual differences in person characteristics to development. In contrast, developmental-ecological approaches stress the fundamental interdependence of person and ecosystem. Within a PPCT framework interdependence is manifest in three ways: (1) person characteristics can influence the nature of the individuals proximal environment; (2) individuals can select into settings with certain characteristics; (3) person characteristics can moderate the influence of proximal processes upon development (Bronfenbrenner & Morris, 2006; Wachs, 2000).

#### Person Structuring of Ecosystem Characteristics

The term *person demand characteristics* has been used by Bronfenbrenner & Morris (2006) to describe the process whereby children's individual physical (e.g., birth weight, gender) and behavioral characteristics (e.g., shyness,

aggressive behavior, agreeableness) can help to shape the intensity and nature of reactions by parents, peers, teachers and other significant figures in the child's life. A similar process is referred to by behavioral geneticists as reactive covariance (Plomin, DeFries, & Loehlin, 1977). Multiple reviews have documented the linkage of child characteristics to patterns of parenting behaviors (Dodge & Pettit, 2003; Sameroff, 2009) and peer relationships (Fontaine & Dodge, 2009). Illustrating developmentally facilitative person demand processes, Werner and Smith (1992) have documented that one of the characteristics of "resilient" children growing up in high risk environments is their ability to elicit adult nurturance and support. Going beyond the microsystem it has been shown that individuals can influence characteristics of their neighborhood through actions such as the degree to which they maintain their property or are involved in community action (Roosa et al., 2003).

### Person Ecosystem Selection

The specific processes through which persons play an active role in their development have been labeled by Bronfenbrenner & Morris (2006) with the term "*generative dispositions*" and by behavior genetic researchers using the term "active person-environment covariance" (Plomin et al., 1977). Both terms refer to individuals actively structuring the nature of their proximal environment by selection into or avoidance of specific situations. The operation of active microsystem selection processes is illustrated by a consistent body of evidence documenting that temperament characteristics, such as effortful control/self-regulation and high-intensity pleasure, can influence the level of the child's exposure to deviant peers and to negative life events (Lengua & Wachs, 2012). Going beyond the microsystem there is evidence that parental characteristics can influence what neighborhoods families move into (Roosa et al., 2003; Simons et al., 1997) and that adolescents with a history of behavior problems are likely to continue to maintain ties with peers in their previous neighborhood even after their family moves away (Tolan et al., 2003).

### Person Characteristics Moderate Ecosystem Influences

Individual differences in reactivity to similar environments is illustrated by evidence that not all individual's growing up in the same family, neighborhood, or culture, or receiving the same intervention program show similar patterns of development or similar outcomes (Obradović & Boyce, 2009; Wachs, 2000). Individual differences in reactivity to ecosystem conditions also is inherent in the concept of resilient children who develop unexpectedly

well even in the face of exposure to multiple risks (Masten & Obradović, 2006; Werner & Smith, 1992).

### Specific Child Characteristics as Moderators

Whereas some studies have shown moderation of ecological influences by child *gender* (e.g., Dodge & Pettit, 2003; Hamre & Pianta, 2001) other studies have reported either inconsistent or nonsignificant findings (e.g., Criss, Pettit, Bates, Dodge, & Lapp, 2002; Odgers et al., 2009). One explanation for this inconsistent pattern is that males and females may be equally sensitive to ecological influences but the pattern of sensitivity differs as a function of gender (Booth, Granger, & Shirtcliff, 2008; Jaffee et al., 2007; Wen & Lin, 2012).

More consistent evidence for person moderation of ecosystem influences comes from research involving child cognitive or social-emotional behavioral characteristics including (but not limited to):

- *Cognitive ability* (Hamre & Pianta, 2001; Qouta, Punamäki, & El Sarraj, 2008)
- *Social cognitive processing mechanisms* (Dodge & Pettit, 2003)
- *Child-temperament characteristics* such as adaptability, emotional reactivity, sociability, and self-regulation or effortful control (Lengua & Wachs, 2012; van IJzendoorn & Bakermans-Kranenburg, 2012)

Although the overwhelming majority of studies on individual moderators of ecological conditions are derived from studies done in high income countries there is also a small but consistent literature from LAMI countries showing moderation of the impact of children's exposure to nutritional deprivation (DeVries, 1984) or societal violence (Kithakye, Morris, Terranova, & Myers, 2010) by child temperament characteristics.

Research on the role of child characteristics as moderators also illustrates that this process is bidirectional in nature. For example, individual characteristics like positive temperament or high intelligence, which have been shown to buffer children against low-moderate stress, lose their protective power for children faced with multiple cumulative stresses (Jaffee et al., 2007; Sameroff & Rosenblum, 2006; Ungar et al., 2013).

### Individual Biological Characteristics as Moderators

Studies from both high-income (Peek & Stough, 2010) and LAMI countries (Wachs, Chang-Lopez, Walker, & Meeks-Gardner, 2007) have shown that children with preexisting physical vulnerabilities are more sensitive to the negative impact of subsequent risk exposure. Similarly, children

with a history of prior malnutrition are more sensitive to later nutritional deprivation than children who have not been malnourished (Grantham-McGregor, Chang, & Walker, 1998; Pollitt, Cueto, & Jacoby, 1998).

With major advances in gene mapping techniques there also is increasing evidence showing that the impact of a wide variety of microsystem conditions, ranging from parental sensitivity to child abuse, differs as a function of individual gene variations. Of particular importance are those genes involved in *dopamine* (Bakermans-Kranenburg & van IJzendoorn, 2011; Beach, Brody, Philbert, & Lei, 2010) and *serotonin* metabolism (Bakermans-Kranenburg, Dobrova-Krol, & van IJzendoorn, 2011; Petersen et al., 2012). Research on genetic moderation of proximal influences again illustrates the bidirectional nature of moderation processes, with microsystem characteristics acting to influence patterns of genetic influence and expression, both at the behavioral (Asbury, Wachs, & Plomin, 2005) and molecular levels (Meaney, 2010).

### ***Mechanisms Underlying Person Moderation***

Five mechanisms have been suggested as underlying person moderation of ecological influences: (1) differential sensitivity; (2) goodness of fit; (3) differential coping; (4) differential perceptions; and (5) epigenetics. *Differential sensitivity* involves environmental risks interacting with individual biological or behavioral susceptibilities. Biologically, exposure to a given risk factor may or may not result in compromised development depending on the individual's genetic liability (Rutter, Moffitt, & Caspi, 2006). Behaviorally, there is an increasing body of evidence illustrating that children who are high in reactive temperament are either more vulnerable to environmental stressors (*differential reactivity*; Lengua & Wachs, 2012) or are more susceptible to both environmental stressors and environmental supports than children with less reactive temperaments (*differential susceptibility*; van IJzendoorn & Bakermans-Kranenburg, 2012).

Underlying *goodness of fit* is the assumption that children's adjustment varies depending on the degree of congruence between a child's individual characteristics, such as temperament, and ecosystem characteristics such as parental goals, cultural values (Lerner et al., 2005; Wachs, 2005) or the stresses and resources that characterize the historical time period a given birth cohort is living through (Elder & Shanahan, 2006).

Depending on *individual differences in coping strategies* children under stress may either show vulnerability or resilience (Evans & Kim, 2013; Lengua & Long, 2002). Preadolescent children are more likely to successfully cope

with ecological stressors if they have higher usage of active coping strategies such as:

- *Appraisal* (Buckner, Mezzacappa, & Beardslee, 2009; Lengua & Long, 2002)
- *Flexible information-processing strategies* (Qouta et al., 2008)
- *Future orientation* (Seginer, 2008)
- *Ideological commitment* (Lustig et al., 2004)
- *Self-efficacy* beliefs (Qouta et al., 2008)

Illustrating the interplay between the chronosystem and person characteristics a different set of coping mechanisms may be utilized by adolescents. These include goal setting (*selection*), acquisition of goal-relevant strategies (*optimization*) and use of alternate goal relevant strategies (*compensation*) when preferred strategies are not functional (Freund & Baltes, 2002).

Individual differences in *perceiving, interpreting, and evaluating the environment* also can underlie person moderation (Magnusson & Stattin, 2006). Consistent with developmental-ecological theorizing on the intertwined nature of context and person the impact of contextual conditions (actual environment) varies as a function of how the individual perceives their surrounds. For example, the degree of impact of societal violence may depend on the individuals' perceptions of the meaning behind the violence (e.g., whether violence is necessary to achieve an ideological or political goal; Barber, 2001). Similarly, the meaning children attach to parents' discipline strategies can moderate associations between discipline and children's adjustment (Lansford et al., 2010). Biologically, the meaning of family chores for children (perceived as a burden or perceived as meaningful for family functioning) can have physiological consequences in terms of increasing or reducing individual levels of physiological stress markers (Fuligni & Telzer, 2013).

Finally, the classic nature-nurture distinction has been increasingly relegated to the dustbin of history with mounting evidence on experience driven *epigenetic changes in gene expression* (Meaney, 2010). Epigenetics refers to both pre and postnatal ecosystem influences changing patterns of gene expression through fundamental changes in molecular processes such as methylation (van IJzendoorn, Bakermans-Kranenburg, & Ebstein, 2011). Epigenetic changes have the potential to be transmitted across generations (Charney, 2012; Meaney, 2010) and provide a biological mechanism through which individuals with different ecological histories react differently when encountering similar ecosystem conditions (Charney, 2012). While much of the current evidence on epigenetic



processes is based on infrahuman evidence or on human studies with bioecological predictors (e.g., pesticide exposure) there are increasing numbers of studies documenting that epigenetic processes also can occur for human psychosocial influences, (van IJzendoorn et al., 2011). For example, pre- and postnatal maternal stress has been shown to lead to offspring epigenetic changes (Roth & Sweatt, 2011). As a mechanism underlying person moderation epigenetics is totally consistent with those contextual theories emphasizing the unitary nature of individual and context, given that context gets “under the skin” and becomes part of the individual’s biological makeup.

### Summary Conclusions: Person and Proximal Processes

Child behavioral and biological characteristics influence how parents, caregivers and peers react to the child. Children with different characteristics also may select into different ecosystem niches. One important implication of such findings is that children being reared in the same home or attending the same school classroom may be encountering very different microsystems. Depending on person characteristics children may have increased or decreased reactivity when exposed to risk or protective influences. Specific behavioral and biological models have been proposed to explain the mechanisms underlying person moderation of proximal processes. Of the five models presented, epigenetic approaches should have a particular appeal for developmental-ecological theorists as an area for future study.

### THE PPCT MODEL: INTEGRATING TIME INTO THE STUDY OF PROXIMAL PROCESSES

Time (the chronosystem) is most often studied in developmental-ecological research as an age phenomenon, often with regard to the question of the unique salience of early experience for development. Time has also been considered as a cumulative process, in terms of whether the impact of specific experiences will be stronger as these experiences cumulate over time. Cross-generational and historical time influences and chronosystem structuring of ecosystem dimensions also have been investigated (see Elder, Shanahan, & Jennings, Chapter 2, this *Handbook*, this volume, for a review of these areas). In viewing chronosystem influences within a developmental-ecological framework it is essential to recognize that time or age is not viewed as a causal variable, but rather as a proxy term for specific proximal, societal, or biological events that

are characteristic of a given age or time period (Elder & Shanahan, 2006; Wohlwill, 1973b). Exemplifying this viewpoint:

- Adolescence has been characterized as a sensitive period based on significant changes during this time window in the prefrontal and parietal brain regions and the limbic system (Crews, He, & Hodge, 2007).
- The detrimental impact of persistent poverty is not due to the passage of time per se but rather to persistent poverty increasing the probability of increased family stress and disruptions in family proximal processes, as well as reductions in family resources (J. Chen et al., 2010).
- The increasing impact of neighborhood disadvantage as children move into middle-childhood reflects increasing exposure to neighborhood conditions by older children (Ingoldsby et al., 2006).

### Age as a Moderator

Evidence from developmental neuroscience (Lupien, McEwen, Gunnar, & Helm, 2009) illustrates how the sensitivity of the developing brain to biological and psychosocial stimulation varies, depending on the stages and rates of development of different parts of the brain (the concept of “sensitive periods”). At a behavioral level child age has been shown to moderate the impact of multiple ecosystem influences including:

- Microsystem proximal processes (e.g., Aikens & Barbarin, 2008; Burchinal et al., 2002)
- Exposure to biological and psychosocial risks (e.g., Brennan, Hall, Bor, Najman, & Williams, 2003)
- Early educational interventions (e.g., W. Barnett, 2011)
- Neighborhood characteristics (e.g., Hertzman, 2010; Ingoldsby et al., 2006)
- Family economic circumstances (e.g., Huston & Bentley, 2010; Roscigno, 2000)
- Societal violence (Garbarino & Kostelny, 1996) or war (Elder & Shanahan, 2006)

Also exemplifying age moderation is evidence showing that parenting characteristics or rearing patterns that are appropriate for children’s development at one age may not be appropriate at different ages (Dodge & Pettit, 2003; Teti & Huang, 2005). A clinical example of this process is seen in the concept of “parentification,” which occurs when children of substance abusing or severely ill parents take on adult roles and responsibilities at an age when the child is not developmentally ready (Richter & Richter, 2001).

### Comparative Salience of Early Versus Later Influences

For developmental scientists one of the most long-standing issues is the relative importance of early versus later experiences (Bornstein, 1989; Roisman & Fraley, 2013). Are the early years of life a time period when children are uniquely sensitive to biological and psychosocial ecological events or do ecosystem characteristics contribute to development across the life span? Evidence from both the biological and psychosocial domains reviews offers support for both positions:

- There are unique long-term influences upon neural, physical and psychological development resulting from exposure to bioecological and psychosocial events (e.g. adequacy of nutrition, cognitive stimulation, responsive-sensitive parenting, stress) occurring during the first 5 years of life (including the prenatal period; Lupien et al., 2009; Wachs, Georgieff, Cusick, & McEwen, 2014; Yousafzai, Rasheed, & Bhutta, 2013).
- Continued early exposure to proximal risk factors has the potential to influence reactivity to later risk through increasing the child's sensitivity (*sensitization*) to the negative impact of subsequent psychosocial (Catani et al., 2010; Garbarino, 2001) or bioecological risks (Andersen & Teicher, 2009; Grantham-McGregor et al., 1998).
- Complementing sensitization is *blunting*, which refers to children with a history of early risk exposure being less able to benefit from subsequent exposure to protective influences (Wachs, 2000). Evidence for blunting has been shown for both psychosocial (Beckett et al., 2006; Sameroff & Rosenblum, 2006) and bioecological risks (My-Lien, Meyer, & Winick, 1977; Wachs et al., 2007).
- While the early years of life are "privileged" this time span is not the sole period during which ecological influences on development can occur. Later age periods such as adolescence and even adulthood are also a time when individuals are sensitive to extrinsic bioecological and psychosocial influences (Crews et al., 2007; Lupien et al., 2009) or to continuing child-environment transactional processes (Roisman & Fraley, 2013).
- There appears to be a high degree of *specificity* such that sensitive time windows vary, depending not just on rate of development of specific neural and behavioral functions but also on what outcomes are being assessed and the nature of bioecological and psychosocial events (Roisman & Fraley, 2013; Wachs et al., 2014).

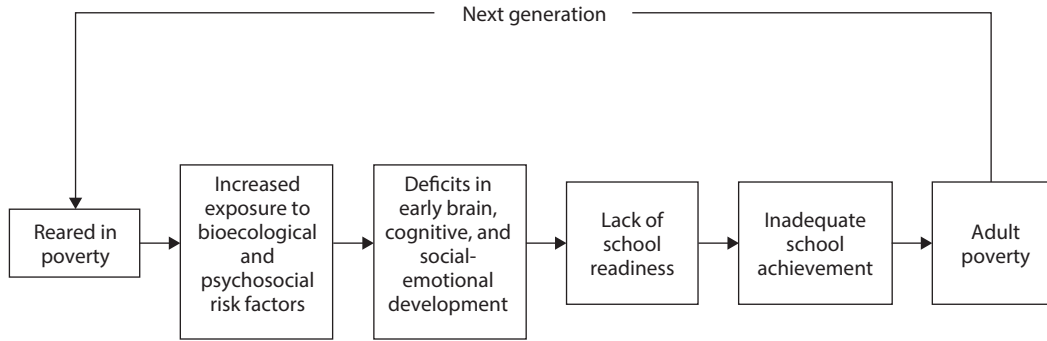
This pattern of findings emphasizes the importance of *both* early interventions for young children with high

levels of exposure to early developmental risks (Heckman, 2000) and the need for follow-up interventions if gains from early intervention programs are to be maintained over time (Love, Chazen-Cohen, Raikes, & Brooks-Gunn, 2013). The need for follow-up of high-risk children is further supported by evidence that the impact of risk factors encountered early in life may not appear until later ("lagged" or "sleeping" effects: Greenberg, Domitrovich, & Bumbarger, 2001).

### Time as a Cumulative Phenomenon

Bronfenbrenner and Morris (2006) have emphasized the stability or instability of proximal processes over time as essential for establishing long-term developmental pathways. As exposures to stable developmentally facilitative ecosystem factors cumulate over time the probability of positive developmental trajectories is increased, as seen when early cognitive interventions set off a chain of subsequent facilitative events that result in long-term educational attainment (Ou, 2005). However, the converse also holds. When children are continually exposed to psychosocial and bioecological risk conditions as they are growing up (*cumulative risk*) there is a significantly increased likelihood of cognitive or social-emotional problems (Ackerman, Brown, & Izard, 2003; Brennan et al., 2003; Hertzman, 2010) and increased physiological stress (allostatic load; Blair et al., 2011; Repetti, Robles, & Reynolds, 2011).

Early exposure to multiple risks may be particularly problematic through "built-in" stability which predisposes to cumulative risk exposure over time. Children exposed in their early years to multiple risk factors have an increased probability of encountering other risks later in life (Greenberg et al., 2001; Hertzman & Boyce, 2010; Sameroff & Rosenblum, 2006), which both maintain and accentuate the initial adverse impact of prior multiple risk exposures. Built-in cumulative risk exposure is particularly likely to occur for children growing up in poverty conditions given that poverty is a marker for exposure to multiple developmental risks (see Figure 21.3) and the consequences and risks associated with growing up in poverty may be transmitted *across generations* (S. Walker et al., 2011). The model shown in Figure 21.4 illustrates how the intergenerational transmission of poverty is the result of a cumulative time-linked pathway going from insufficient cognitive stimulation and inadequate nutrition early in life to a lack of school readiness and subsequent school failure. School failure in turn results in an increased likelihood of adult poverty, which means a less adequate



**Figure 21.4** Intergenerational transmission of poverty.

Source: Adapted from “Child Development in Developing Countries 3: Strategies to Avoid the Loss of Developmental Potential in More than 200 Million Children in the Developing World,” by P. Engle, M. Black, J. Behrman, M. Cabral de Mello, P. Gertler, L. Kapiiri, . . . the International Child Development Steering Group, 2007, *The Lancet*, 369, pp. 229–242.

nutritional and rearing environment provided to offspring, thus continuing the cycle.

Consistent with developmental-ecological theories exposure to cumulative risks during development may, over time, “get under the skin” (Hertzman & Boyce, 2010), becoming an integral part of the individual at both a biological and a psychological level. Biologically, there are an increasing number of studies showing how cumulative exposure to early risks can permanently disrupt the functioning of the hypothalamic-pituitary-adrenal axis which governs stress reactivity (Andersen & Teicher, 2009; Hertzman & Boyce, 2010; Repetti et al., 2011) and impair immune system functioning, thus increasing susceptibility to chronic disease later in life (Miller & Chen, 2010).

Psychologically, cumulative risk exposure may influence children’s perceptions of the world they live in and how children evaluate their future (Brandstetter, 2006; Magnusson & Stattin, 2006). For example, Garbarino (2001) has observed that children who experience time-limited trauma can be reassured that things will go back to normal, whereas such reassurance will not necessarily be useful for children experiencing chronic trauma. Similarly, Miller & Chen (2013) have reported that children who are continually confronted with uncontrollable and unpredictable events come to view their world as a threatening place where nothing or no one can be trusted.

### Chronosystem Structuring

Changes in ecosystem characteristics have been associated with changes in *micro-time* (time changes occurring from over the course of a day to over the course of a year), *macro-time* (time across years but within a generation) or *historical time* (across generations).

### Micro-Time

Micro-time changes are associated with changing ecological conditions, as seen in evidence that disruptions in family routines or increased work-family conflict are more likely to occur when adult work hours are irregular (Hsueh & Yoshikawa, 2007; Repetti & Wang, 2010), when parents have little control or sense of control over their work schedules (Kelly, Moen, & Tranby, 2011; Repetti & Wang, 2010), or when there is an overload of time demands (Fiese & Winter, 2010). Studies also illustrate that markers of impaired neighborhood quality, such as drug deals or adolescents hanging around on the streets, are more likely to occur at certain times of the day (Raudenbush & Sampson, 1999). Given that the formation of social ties takes time to develop high residential mobility may weaken neighborhood cohesion (Sampson & Raudenbush, 1997). The bioecological microsystem is also sensitive to micro-time changes, with variability in food availability, disease and child activities being associated with seasonal changes in temperature, rainfall, or exposure to disease agents (Wachs, 2003).

### Macro-Time

Macro-time changes are exemplified by age/time linked variation in economic or national circumstances (e.g., Elder & Shanahan, 2006; also see Elder et al., Chapter 2, this *Handbook*, this volume). One consequence of economic macro-time changes is change in cultural practices. Illustrating this anthropological evidence has shown that over a 20-year period, as the Mayan economy was integrated into the Mexican economy, there were notable changes in traditional cultural practices such as how children were trained

as weavers and the variety of patterns woven (Greenfield, Maynard, & Childs, 2000).

### ***Historical Time***

There is increasing documentation of changes in the nature of microsystem characteristics across different historical time periods (Lichter & Wethington, 2010; also see Stearns, Chapter 20, this *Handbook*, this volume). Historical time influences are also illustrated by evidence showing cross-generational microsystem stability as seen when current adult patterns of child-rearing styles or marital relationships are influenced by the rearing style and marital relationship patterns of prior generations (Bornstein, 2009). Similarly, knowledge of past discrimination towards a given ethnic group may be transmitted across generations and influence patterns of current parental socialization practices and values for that group (Hughes et al., 2006). In some situations cross-generational macrosystem stability can be maintained by current ecosystem circumstances. For example, historically, African Americans who were in slavery may have used harsh physical punishment of their children to promote obedience, so as to avoid even more serious physical consequences if the child was viewed as oppositional by the slave owner (Belsky, 1993). Drawing a parallel between historical and current ecosystem conditions Whaley (2000) has suggested that African American parents living in urban ghettos are likely to also use physical punishment as a disciplinary tool, given that in this context children's acting out behavior could lead to serious legal consequences for child and parent.

There is also intriguing evidence documenting links between historical events and current biological outcomes. Epidemiological research has documented a three generational positive association between African American grandmothers adult height or birth weight with that of their daughters and grandchildren's birth weight (Emanuel, 1997). Although shared genes are one obvious explanation for this cross-generational linkage there is also a compelling case for an historical/chronosystem explanation, based on evidence documenting an association between inadequate maternal diet and lower offspring fetal growth/birth weight for African American women who were slaves (Jasienska, 2009). The metabolic changes required of the fetus to adjust to a nutritionally insufficient prenatal environment could be encoded into their genes through epigenetic mechanisms. These epigenetic changes in gene expression could be carried across generations, resulting in a chronosystem driven cross-generational

association in children's birth weight in African American populations (Kuzawa & Sweet, 2009).

### **Summary Conclusions: Time and Proximal Processes**

The contributions of proximal process characteristics to development can vary as a function of the age of the child. While early bioecological or psychosocial influences have a special salience ecosystem contributions to development are not restricted to just the first 5 years of life but rather continue to be salient across the life span. Time linked cumulative influences may be of particular importance for development and time changes have been associated with changing ecosystem characteristics.

Viewing chronosystem dimensions as a marker for time-linked proximal processes means that understanding the nature of time or age effects can only occur when the proximal events nested under age or time are identified (Schmidt & Teti, 2005). Given this that an important issue for developmental-ecological researchers will be to "unpack time" so as to identify specific underlying mechanisms driving chronosystem associations. Of particular relevance would be research linking neural development to differential sensitivity to proximal conditions at different ages, research investigating processes through which risk exposure becomes stabilized over time, and research on how cumulative risks act to increase children's sensitivity to later risks or limit the child's ability to benefit from later exposure to protective influences.

### **ISSUES IN INTEGRATING ACROSS PERSON, PROCESS, CONTEXT, AND TIME**

A complete specification of the role of the PPCT system in development requires assessment and integration of measures of proximal processes, higher order context, time and individual characteristics. Further complicating matters the distinction between environment and experience made earlier carries with it the implication that researchers may need to measure both the objective environment and the individuals' perceptions of the nature of their environment. All of this is a formidable set of requirements that is, at best, both extremely difficult to implement (G. Gottlieb, 2007; Steinberg, Mounts, Lamborn, & Dornbusch, 1991) and extremely costly in terms of sample sizes, time and effort needed (Card et al., 2008; Sidebotham, 2001; Wachs & Shpancer, 1998). Successfully carrying out a PPCT-based research program requires dealing with three critical issues:



feasibility, interpretability, and utility. Feasibility is primarily a methodological issue while interpretability is primarily an analytic issue. Utility refers to applying PPCT-based research findings to societal problems.

The *feasibility* issue centers on how to realistically limit the time and costs involved in collecting the multidimensional information required for PPCT analyses while still ensuring adequate statistical power and generalizability of findings. Power demands are increased as the number of groups or variables assessed increases (Aiken & West, 1991), as occurs when there is measurement of all four PPCT dimensions. Assuring generalizability of findings requires testing for PPCT interactions to determine if the influence of proximal processes systematically varies as a function of person characteristics, higher-order context or time. However, greater statistical power is needed to detect interactions than to detect main effects (Whisman & McClelland, 2005). Standard approaches to improving statistical power, such as increasing sample size can be quite costly, particularly when using a full PPCT design. Standard approaches to limit time and costs, such as reducing the number of PPCT dimensions assessed, can limit generalizability of findings. Two potential approaches to the feasibility problem are proposed in the next section: *increasing measurement preciseness* and *utilization of cost-effective ecological assessments*. However, it is important to recognize that neither of these approaches totally solves the feasibility issue, particularly when resources are limited (as is usually the case), given the trade-off between power, cost, and generalizability.

### Increasing Measurement Preciseness

Statistical power can be enhanced by increasing sample size (which drives up research costs) or through increasing measurement preciseness (Seifer, 2005; Whisman & McClelland, 2005). Increased measurement preciseness can result from use of subgroup analysis, greater specification of ecological dimensions, use of observational assessments or aggregating across information sources. Descriptions of how each approach enhances measurement preciseness and the problems with each approach are seen in Table 21.2.

#### Subgroup Analysis

Based on person or contextual characteristics a sample can be divided into groups that potentially vary in sensitivity to proximal processes (e.g., Jiang, Pepler, & Yao, 2010; van IJzendoorn & Bakermans-Kranenburg, 2012). Although preciseness can be increased with this procedure power is reduced when analysis is based on subgroups. Hence, this approach appears to be useful primarily when classification data is continuous in nature.

#### Increased Specification

Assessment of the exosystem dimension of social support illustrates how detailed specification of ecological characteristics can reduce measurement error and thus increase preciseness. To understand the role of social support it is necessary to distinguish between social networks and social support. Social networks are structural in nature and

**TABLE 21.2 Approaches to increasing measurement preciseness in developmental-ecological research**

Approach Characteristics	Strengths	Problems
Subgroup analysis	Stronger effect size when sensitive and nonsensitive individuals are not grouped together. Analysis of person $\times$ process or context $\times$ process interactions consistent with PPCT model.	When subgroups are the unit of analysis (e.g., subgroups identified using median splits) sample sizes are reduced with a concurrent loss of power (Whisman & McClelland, 2005).
Greater specification of ecological dimensions that are entered into the analysis	Preciseness can be reduced when different dimensional characteristics, which influence development in different ways, are mixed together (the issue of specificity).	Potentially increased feasibility costs depending on the time and effort required to get the information needed for specification.
Observational assessments: based on either direct coding or coding from videotapes of objective ecological characteristics	Direct observational assessments can accurately describe objective ecological characteristics and thus increase measurement preciseness and statistical power (Seifer, 2005).	High time costs using both direct onsite coding, coding from videotapes rather than as events occur, or when multiple observations are required (Kerig, 2001; Seifer, 2005).
Aggregation across multisource information (mixed methods; Greene, 2005)	Integrating across information sources can improve preciseness given that errors of measurement are reduced when multiple measures are aggregated into a common score (Bates & Novosad, 2005).	If measures other than self-reports are used integration across sources can be more costly (less feasible). There can be a lack of convergence between different sources, as seen in studies reporting significant discrepancies between child and maternal report measures (Gonzales, Cauce, & Mason, 1996; Sessa, Avenevoli, Steinberg, & Morris, 2001; Tein, Roosa, & Michaels, 1994).
	Aggregating information across sources can also increase preciseness by providing a unique perspective on context that is not easily captured by single-source information sources (Sullivan, 1998).	

refer to the extent of linkages between an individual and their friends, neighbors, relatives, or colleagues. Social support is functional in nature and refers to support, help, or information that members of the network provide to an individual (Cochran & Walker, 2005). Assessing the social network using questions designed to assess social support may seriously underestimate the size of the individual's social network. In addition, it also is important to specify sources of support given that results may vary for different sources (e.g., support from spouses, relatives, friends; Coventry et al., 2004). However, as noted in Table 21.2 the time and effort required to get the information needed for increased specification can increase costs. For example, even with a common metric such as family income, the impact of poverty for families in high income countries is not the same as in LAMI countries given cross-country differences in infrastructure characteristics (e.g., sanitation, health services and schooling) and availability of social safety nets (e.g., food assistance programs) (J. Chen et al., 2010; Engle, 2012; Gassman-Pines & Hill, 2013; Sheuya, 2008).

### **Observations**

Observational procedures have been used to directly measure microsystem characteristics in the home (e.g., Bradley, 1999; Wachs, 1989), school (e.g., Avant, Gazelle, & Faldowski, 2011) and peer group (e.g., Mikami, Gregory, Allen, Pianta, & Lun, 2011), as well as exosystem neighborhood characteristics (e.g., Chirowodza et al., 2009; Raudenbush & Sampson, 1999) and macrosystem cultural parameters (e.g., Gaskins, 2000; Super & Harkness, 1999). As seen in Table 21.2, while observational procedures can increase measurement preciseness there also are high time costs associated with observational measurement, particularly when repeated observations are needed to reduce observer effects and increase representativeness (Kerig, 2001; Pellegrini, 2001; Seifer, 2005).

### **Aggregation Across Measures**

Use of aggregated information can increase preciseness both by reducing error of measurement and by accurately reflect existing ecological complexities. However, as seen in Table 21.2, a critical problem is low convergence between sources, particularly when low source convergence is due to differential accuracy. For example adolescents appear to be more accurate raters of maternal restrictiveness than mothers themselves (Gorman-Smith et al., 2000); in this case, aggregating across maternal and adolescent reports would *reduce* measurement preciseness. Aggregating across low convergence sources also can

reduce preciseness by masking proximal processes, as seen when differences between sibling reports of rearing styles of their parents are the result of siblings being treated differently (Gorman-Smith et al., 2000; Persson, 2011).

### **Utilization of Cost-Efficient Ecological Measures**

Feasibility of PPCT-based research designs also can be increased by greater usage of *cost-efficient approaches*. Increased cost efficiency can be obtained by use of existing data sources, integration of person and context measures into quasi-experimental studies and use of self-report measures.

#### **Use of Existing Data Sources**

As shown in Table 21.3 there are public record databases that describe a variety of exosystem and macrosystem characteristics. Although relatively low-cost to obtain, and thus more feasible, concerns have been raised with regard to how precise is exosystem and macrosystem information derived from existing data sources. Specific concerns include:

- Defining neighborhoods just on the basis of objective information assumes homogeneity of sample or ecological characteristics within a neighborhood, which may not be the case (Sampson et al., 2002).
- Census tract information is often collected at long time intervals and may misrepresent the nature of neighborhoods with high population mobility, or census tracts may not map onto residents perceptions of what are the boundaries defining their neighborhood (Roosa et al., 2003).
- Potentially important information such as neighborhood social networks may not be contained in public databases (Leventhal & Brooks-Gunn, 2000).
- Information contained in existing databases may not be the information needed to answer specific questions. For example, the United Nation's Human Development Index (<http://hdr.undp.org/en/statistics/>) contains little information on psychosocial influences such as quality of parent-child interactions.

#### **Quasi-Experimental Studies**

Quasi-experimental studies typically are designed to look for main effects of natural (e.g., natural disasters) or implemented ecological changes (e.g., intervention programs for at risk families). Person or contextual information can be integrated into quasi-experimental studies through systematic collection of low cost measures of individual characteristics (e.g., gender, age, temperament, mental

TABLE 21.3 Publicly available existing data sources describing exosystem and macrosystem characteristics

Available Information	Source
Neighborhood boundaries	Census tract descriptions available from the U.S. Census Bureau ( <a href="http://www.census.gov">www.census.gov</a> ) (e.g., Sheidow et al., 2001; Shumow et al., 1999)
Neighborhood resource characteristics (e.g., schools, clinics, businesses, libraries)	Obtained through cross-referencing zip codes to address databases (e.g., Peterson, Krivo, & Harris, 2000)
Neighborhood risk factors (e.g., crime rate, physical disorder, or decay)	Police crime statistics for a given area (e.g., Shumow et al., 1999) Neighborhood image databases, such as Google Street View, allow raters to take a “virtual walk” through a neighborhood and code objective physical features (e.g., Odgers, Caspi, Bates, Sampson, & Moffitt, 2012)
Parent work-time demands	Company work-hour records (e.g., Schomann, Giebel, & Nachreiner, 2006)
Economic conditions across multiple countries	Statistical indicators such as per capita gross national income (national income divided by population for a given country) are online at the World Bank ( <a href="http://www.worldbank.org">www.worldbank.org</a> )
National health status or educational outcomes	Country-level information on health (e.g., percentage of children receiving vaccinations) or educational outcomes (e.g., percentage of children in primary school) is available from UNICEF ( <a href="http://www.unicef.org/sowc">www.unicef.org/sowc</a> )
Cultural characteristics	Compilations of anthropological-ethnographic reports on multiple cultures in domains such as cultural values, social organization, family composition, religion, and socialization can be found in the Human Relations Area Files ( <a href="http://ehrafworldcultures.yale.edu">http://ehrafworldcultures.yale.edu</a> ) and the Standard Cross-Cultural Sample database ( <a href="http://www.escholarship.org/uc/item/62c5c02n">http://www.escholarship.org/uc/item/62c5c02n</a> )

health), or overall context (e.g., SES or parental education level). Analysis of person  $\times$  process or context  $\times$  process interactions would enhance preciseness through identification of what characterizes children who do or do not respond to natural or implemented ecological changes. However, as previously discussed, a major downside is the increased power demands when analyzing for such interactions.

### Use of Self-Report Measures

Subjective self-report measures, such as semistructured or unstructured interview procedures and structured questionnaire or survey instruments, are used to assess individuals' perceptions of the nature and reality of their lives across different ecological dimensions (e.g., the family, the neighborhood). As previously discussed adult and child perceptions of family or neighborhood characteristics can mediate the influence of objective measures of these ecosystem dimensions.

A primary strength of *interview-based procedures* (including panel discussions, ethnographic interviews or family narratives) is applicability across a wide range of ages and a wide variety of contexts. For example, interview type procedures have been used with child workers in multiple countries to provide information from the child's perspective on the positive and negative consequences of working (Liborio & Ungar, 2010). Puppet play interview procedures have been successfully used to assess the preschool and young elementary child's perception of their family environment (Sessa et al., 2001; Silk, Sessa, Morris, Steinberg, & Avenevoli, 2004) while telephone interviews

have been used with both parents (Aikens & Barbarin, 2008) and children (Pettit et al., 1999) to reduce time costs through reducing travel time for interviewers.

The downside of interview-based procedures is the potentially high time cost, which can reduce feasibility. Ethnographic interview procedures may require the interviewer to immerse themselves in a culture for sustained periods of time in order to understand the meaning of events for persons in that culture (Cho, Sandel, Miller, & Wang, 2005). In addition, the high time costs involved in recording and organizing the enormous amounts of information generated by interview based assessments can sharply reduce the number of individuals who can be assessed and thus curtail statistical power. (Gorman-Smith et al., 2000).

Reviews of available *structured quantitative questionnaire or survey measures* of parenting practices in high income countries are found in Locke and Prinz (2002) and L. Walker and Kirby (2010); for examples of survey measures of parenting in LAMI countries see Bornstein et al. (2012). A listing of validated self-report questionnaires applicable to children or adults in domains besides parenting is shown in Table 21.4.

With regard to enhancing feasibility quantitative self-report rating scales require far less data collection time than observations or interview/ethnographic assessments. As a consequence larger samples can be assessed which can increase statistical power. Time costs can be reduced even further when self-report questionnaires are sent and returned by postal or by electronic mail (Trevor, 2007). Surveys of neighborhood conditions based on resident

TABLE 21.4 Examples of validated self-report measures used at different ecosystem levels

Reporting Source	Ecosystem Characteristics Assessed
Parents (Western or high-income countries)	<i>Stress exposure</i> (e.g., Gassman-Pines & Yoshikawa, 2006) <i>Marital relationship</i> (e.g., Criss, Pettit, Bates, Dodge & Lapp, 2002) <i>Home chaos</i> (e.g., Matheny, Wachs, Ludwig, & Phillips, 1995) Promotion of <i>child health or nutrition</i> (e.g., L. Walker & Kirby, 2010) <i>Family food insecurity</i> (e.g., Metallinos-Katsaras et al., 2011) Parental <i>social support</i> networks (B. Gottlieb & Bergen, 2010; McConnell et al., 2010)
Parents (non-Western or LAMI countries)	<i>Home chaos</i> (e.g., Shamama-tus-Sabah et al., 2011) <i>Household possessions</i> (e.g., Zevalkink & Riksen-Walraven, 2001) <i>Bioecological resources: availability of medical facilities</i> (e.g., R. Mistry et al., 2009)
Children (Western or high-income countries)	<i>Parental control, warmth, and monitoring</i> (e.g., Barber, 2001; Brody et al., 2001; Persson, 2011) <i>Family chaos</i> (e.g., Hanscombe, Haworth, Davis, Jaffee, & Plomin, 2010) <i>Racial discrimination</i> (e.g., Brody et al., 2006) <i>School characteristics</i> (e.g., Persson, 2011) <i>Social support networks</i> (e.g., Nicotera, 2007) <i>Child friendships or peer relationships</i> (e.g., Yugar & Shapiro, 2001) <i>Working conditions</i> (in countries where child labor is common; e.g., Dawes et al., 2012)
Adults—not necessarily parents (Western or high-income countries)	Use of paper and pencil drawings of an “eco-map,” which describes a families social and institutional mesosystem connections, the strength of the various connections, and connections that are particularly stressful for the family (Hartman, 1995) Neighborhood characteristics such as <i>disorganization, cohesion, social support</i> (e.g., Gorman-Smith et al., 2000; Leventhal & Brooks-Gunn, 2000) <i>Changes in neighborhood characteristics</i> over time (e.g., Axinn & Yabiku, 2001) General <i>work stress</i> (e.g., Stanton, Balzer, Smith, Parra, & Ironson, 2001; Story & Repetti, 2006) or specific work stressors such as overload (e.g., Greenberger, O’Neil, & Nagel, 1994) Cultural characteristics such as individualism (e.g., Oyserman et al., 2002)
Applicable to adults or children (Western or high-income countries)	Measures such as time diaries, event history calendars, or experience sampling (recording time, location, and what activities the individual is engaged in when randomly cued by a wearable preprogrammed signal device) have been used to assess specific events occurring over an extended time period including: <ul style="list-style-type: none"> <li>• Extent of children’s television viewing and videogame playing (e.g., J. C. Wright et al., 2001)</li> <li>• Occurrence of daily stresses (e.g., Stafford, 2009)</li> <li>• Family daily activities (e.g., Schneider, 2009)</li> </ul>
Parallel self-report measures used with both older children and adults	Family violence or parental arguments (e.g., Garbarino & Kostelny, 1996) Level of family cohesion, communication, parental monitoring, acceptance, rejection, discipline, or control (e.g., Sheidow et al., 2001; Tein et al., 1994) Child and teacher measure of school fostering caring and supportive relationships, student autonomy, or student decision making (e.g., Battistich, Solomon, Kim, Watson, & Schaps, 1995)

reports have been criticized for inadequate psychometrics. However, assessments of interrater agreement, item consistency and instrument reliability have validated resident self-report measures (Raudenbush & Sampson, 1999). Cost-effective measures of work stress can be assessed using *ecological momentary analysis procedures* where workers use handheld computers to record their level of job stress at random intervals (Rutledge et al., 2009), or when workers are fitted with ambulatory physiological stress measures (e.g., blood pressure: Zanstra & Johnston, 2011).

Self-report questionnaires can increase both preciseness and feasibility in a variety of ways:

- Self-report measures have built-in aggregation when respondents base their ratings on their experiences

over time within their family, school or neighborhood (Gonzales, Cauce, & Mason, 1996; Seifer, 2005).

- Self-report measures allow assessment of low frequency but highly salient events like encountering overt racial discrimination (Wong, Eccles, & Sameroff, 2003).
- Child self-report measures allow assessment of out-of-home events that parents are not aware of. For example, 32% of inner-city children report having seen a person being stabbed but only 6% of their mothers reported that their child had seen a stabbing (Ceballo, Dahl, Aretakis, & Ramirez, 2001).
- Information gathered from neighborhood residents self-report questionnaires are more likely to be up to date than objective census based measures and are more



likely to indicate locations that residents actually frequent (Roosa et al., 2003).

However, the benefit of enhanced feasibility must be weighed against concerns about the validity of information obtained with self-report questionnaires (Seifer, 2005). One concern is that self-report ratings may only partially reflect objective situations due to respondents' ratings being influenced by systematic biases such as cultural context (Chao, 1994; Pena, 2007), social desirability (Stafford, 2009) or person characteristics (Wachs, 2013). A second previously discussed concern is the meaning of self-reports when there is low convergence between different sources rating the same context. Assessing convergence between adults and children is particularly problematical given that many adult measures are not appropriate or equivalent for children. As noted in Table 21.4, there are a small number of validated parallel self-report questionnaire measures for adults and older children. Unfortunately, there are all too few parallel adult-child measures which can be used with younger children and those that exist are usually based on child interview assessments, which have higher time costs (e.g., Sessa et al., 2001; Silk et al., 2004).

### Interpretability

The complex multidimensional nature of the PPCT model stands in stark contrast to the fondness of many developmental scientists for main effects analysis, as exemplified by the widespread use of experimental designs or statistical control techniques (e.g., analysis of covariance). Experimental designs or statistical controls are appropriate if the research goal is to isolate unique effects of a specific predictor such as neighborhood or iron status, or if the child's world consists of unrelated sets of independent influences. Both theoretically and empirically the former goal is antithetical to a developmental-ecological framework whereas the latter situation rarely applies in the "real world" ecosystem (Bronfenbrenner & Morris, 2006; Huston & Bentley, 2010; Magnusson & Stattin, 2006; Wachs, 2000). However main effect analysis, while all too often yielding oversimplified conclusions, is more easily summarized and understood (more interpretable). PPCT-based research encompassing multiple linked mediating and moderating influences is not as easily summarized or understood (less interpretable).

Interpretability could be enhanced by limiting the number of PPCT dimensions tested so as to reduce the number of relations that need to be interpreted. However, with

reduced predictor models generalizability of findings will be limited to those PPCT dimensions that are in the analysis. A more appropriate strategy would involve applying analytic techniques that capture multiple PPCT dimensions without sacrificing interpretability (Magnusson & Stattin, 2006). Four such techniques are described next.

### *Principal Component Analysis*

(See Burchinal, Roberts, Hooper, & Zeisel, 2000.) Interpretability is enhanced given that either exploratory or confirmatory principle component analysis allows identification of a reduced number of dimensions defining ecological characteristics, which can then be used as the unit of analysis.

### *Hierarchical Linear Modeling (HLM)*

(See McCartney, Burchinal, & Bub, 2006.) By capturing the multilevel structure of the child's ecosystem in an analytical meaningful way HLM in its various forms has the potential to enhance interpretability. HLM procedures also can enhance interpretability by modeling of individual (person) reactivity to proximal or contextual characteristics. Finally, interpretability is enhanced when HLM latent variables defining a specific construct are constructed out of multiple conceptually related ecological characteristics.

### *Cluster Analysis*

(See von Eye & Bergman, 2003.) Rather than interpreting multiple predictors individually cluster analysis is based on comparisons between a limited number of multidimensional clusters differing on sets of person, process and/or contextual characteristics. Because membership in a multidimensional cluster is the unit of analysis this procedure is highly consistent with developmental-ecological theory.

### *Latent Class Growth Analysis (LCGA)*

(See von Eye & Bergman, 2003.) LCGA is of special relevance to chronosystem assessments. Similar to cluster analysis LCGA enhances interpretability through grouping individuals into smaller sets of distinct clusters. However, in LCGA clusters are based on the similarity of individual developmental trajectories rather than person or ecological characteristics. Cluster differences in trajectories can be related to a variety of individual or ecological characteristics.

### *Analytic Drawbacks*

While the four analytic approaches described above have the potential to increase interpretability of findings from

PPCT based research there are also potential problems when these methods are utilized (Bauer & Curran, 2003; Magnusson & Stattin, 2006; von Eye & Bergman, 2003). Because clusters are multidimensional this can obviate the chances of identifying specific unidimensional predictors. This should not necessarily be seen as a weakness, given that multidimensional clusters have greater ecological validity because they capture more of a child's overall experience and the interplay between person and context (McGroder, 2000). However, these methods do often require large sample sizes, which can be problematical for exosystem or macrosystem analyses. For example, when neighborhood or cultural influences are part of the overall model it may be difficult to obtain sufficient numbers of neighborhoods or cultures for HLM analyses to be successfully applied (Brody et al., 2001; McCartney et al., 2006). Finally, there is concern that cluster analysis and LCGA techniques can yield misleading group classifications when an overall sample is actually homogeneous. When spurious groupings are derived this will likely result in lower power when attempting to identify influences leading to cluster membership (Bauer & Curran, 2003).

### Utility

Neither the complex multidimensional nature of the child's world or the probabilistic nature of findings from PPCT based ecological studies easily lend themselves to "universal laws," parsimonious undetermined explanations or the assumption that findings will be applicable across context, person or time (Huston & Bentley, 2010; Lerner et al., 2005; Sidebotham, 2001; Sullivan, 1998). Unfortunately, results couched in probability statements, confidence intervals or limited generalizability of findings are not likely to appeal to public policymakers. Policymakers tend to prefer specific yes/no answers to broad questions (has this intervention been proven to reduce behavior problems) rather than answers that are more realistic but also more complex (yes, the intervention works for children with certain characteristics living in certain types of neighborhoods; Gormley, 2011). If PPCT findings are to be applied to real world problems a critical goal is to summarize conclusions in a way that will appeal to policy makers without sacrificing complexity.

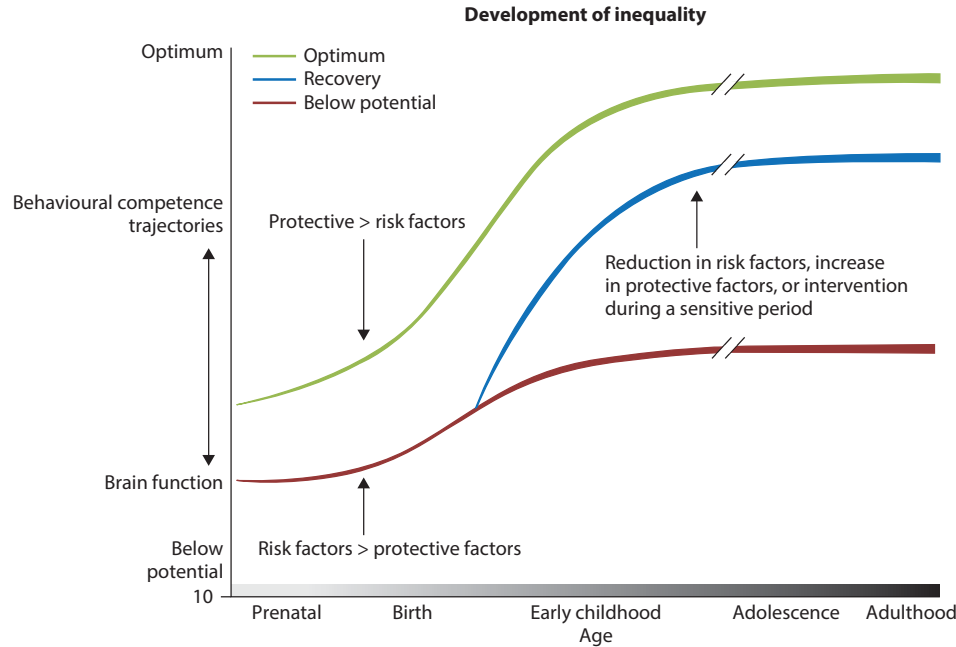
A possible solution to the utility issue may lie in greater use of cumulative risk indices (CRI; Sameroff & Rosenblum, 2006). CRI are based on evidence showing that children's exposure to a single isolated biological or psychosocial risk is often less detrimental to development than

children's repeated exposures to multiple biological and/or psychosocial risks (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Bradley, 2004; Sameroff, Gutman, & Peck, 2003). CRI's summarize the individual's (or populations) level of exposure to a variety of known *biological* (e.g., low birth weight, exposure to toxins), *psychosocial* (e.g., harsh parenting, home chaos, classroom crowding), *individual* (e.g., difficult temperament), *exosystem* (e.g., neighborhood disorganization), or *macrosystem risk factors* (e.g., minority status). Each specific risk the individual is exposed to is given a score of 1. All the risk items scored as 1 are summed into a total cumulative risk score for that person (e.g., Appleyard et al., 2005). With regard to enhancing utility the CRI has four important advantages:

1. CRI's accurately represent the overall nature of the child's world in terms of assessing the simultaneous contribution of multiple risk factors.
2. By using a common metric CRI's facilitate comparison of the risk for compromised development for children from a variety of different macrosystem contexts, as seen in studies from both high-income (Moore, Vandivere, & Zakia, 2006) and LAMI countries (Barnes, Noble, Wright, & Dawes, 2009) successfully using CRI's generated from existing data sources.
3. By reducing the impact of multiple predictors to a single number the CRI allows for easier interpretation than if the contribution of multiple risk factors had to be considered individually. Children at greater risk for compromised development will have a higher CRI score and thus a greater need for intervention.
4. Reducing multiple risk predictors to a single number can improve feasibility by promoting a better variable-sample size ratio, which can lead to greater statistical power (Burchinal et al., 2000).

An expanded version of this approach involves combining a set of empirically validated known protective influences into an overall cumulative protective index (CPI; Sameroff et al., 2003) and assessing the CRI/CPI balance. An illustration of the developmental consequences associated with the balance between risk and protective influences is shown in Figure 21.5.

One drawback is that the cumulative risk/protection approach does not allow for identification of specific risk or protective influences that may be particularly salient for a given developmental outcome (Burchinal et al., 2000). However, when samples of children with high CRIs (or low CPIs) are identified interventions should focus on



**Figure 21.5** Balance between risk and protective factors.

Source: From “Inequality Begins by Early Childhood: Risk and Protective Factors for Early Child Development,” by S. Walker, T. D. Wachs, S. Grantham-McGregor, M. Black, C. Nelson, S. Huffman, . . . L. Richter, 2011, *The Lancet*, 378, pp. 1325–1338. Reprinted under STM permission guidelines.

reducing the number of risks a child is exposed to (or on increasing exposure to protective influences). Given that risk factors often covary, Wachs and Rahman (2013) have proposed that targeting of risks with the strongest covariance network with other risks would be a cost-effective means of reducing children’s exposure to multiple risks (e.g., targeting maternal depression, which covaries with multiple bioecological and psychosocial risks).

### Summary and Conclusions: Issues in PPCT Research

Research based on a PPCT model requires dealing with issues of feasibility interpretability and utility. Comparisons across multidimensional clusters or use of HLM procedures offer a promising direction for dealing with issues involved in ease of interpretability of PPCT-based findings. Generating multidimensional CRI’s can promote utility of PPCT-based findings to solving real-world issues. However feasibility, defined in terms of assessing PPCT ecological characteristics in a cost-effective yet valid way, remains a persistent and critical problem. Each of the feasibility solutions reviewed has both strengths and drawbacks. Given the trade-off between research costs, statistical power, and generalizability of findings there appears to be no single “gold standard” approach that will solve the feasibility issue. As a result, the choice of which approach to use when dealing with feasibility issues should

be individualized for each study, based on balancing the cost of the different approaches with the levels of power and preciseness needed to answer the questions that are being asked and the resources that are available to the investigator (e.g., Seifer, 2005).

### APPLICATIONS OF A PPCT FRAMEWORK TO INTERVENTION STRATEGIES

PPCT approaches have been applied to a variety of societal issues including peer bullying (Card et al., 2008), child abuse (Sidebotham, 2001), the design of child mental health programs (Dishion & Stormshak, 2007) and promoting children’s resilience in both high (Urban et al., 2009), and LAMI countries (Wachs & Rahman, 2013). The applicability of the PPCT framework to real-world issues should not be surprising given that this framework is rooted in the study of the child in his/her real world context. In this final section applications of the PPCT model to the design and implementation of intervention programs are presented.

#### Applications of the Person Dimension

There is an extensive body of evidence documenting how individual (person) characteristics can moderate individual reactivity to naturally occurring proximal risk

and protective influences and to developmental interventions. Much of the evidence illustrating differential reactivity is based on individual differences in temperament, preexisting biological or behavioral characteristics or specific gene variants.

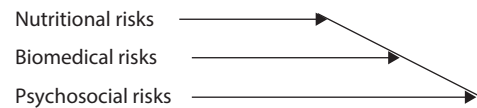
### ***Implications for Application of the Person Dimension***

- Information on individual characteristics associated with differential reactivity should be built in and routinely collected as part of the intervention strategy.
- Identification of children at risk for later developmental or behavioral problems should encompass not just children's exposure to ecological risk conditions but also differentiation of children who are most likely to be adversely affected by risk exposure. For example, children who are high in impulsiveness or low in attention and are living in low quality housing or disorganized neighborhoods are a group that is likely to be at elevated risk for accidental injuries (Hampson & Vollrath, 2012).
- Design of interventions should not be based on a "one size fits all" model. Rather a range of interventions varying in both intensity and type should be designed and offered.
- Assignment to a given intervention should be based on goodness of fit, with specific types of interventions targeted to those who are most likely to benefit from that form of intervention. In the short run targeted interventions may be more costly than the same intervention provided to all. However, targeted interventions are likely to be more cost-effective in the long-run, given that providing interventions to those who are unlikely to benefit is a waste of resources (Kraemer et al., 2001).
- Traditional approaches to measuring intervention success by comparing mean outcome differences between an intervention group and an untreated control group can lead to misleading conclusions if intervention benefits are restricted to a subsample of children with specific characteristics (Jiang et al., 2010). To fully evaluate outcomes information should be provided on intra-intervention group outcome heterogeneity, either by reporting both the outcome mean and standard deviation for the intervention group, by comparing outcomes for clusters of children with different person characteristics, or by using meta-analysis to assess outcome heterogeneity across multiple intervention studies.

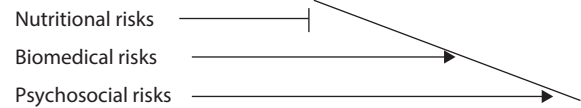
### **Applications of the Process Dimension**

Both the multidimensional nature of the microsystem and the covariance among proximal risk factors means that children are more likely to be exposed to multiple

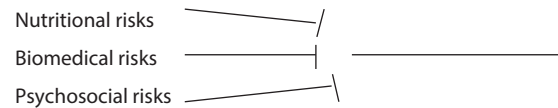
#### **No Intervention**



#### **Unidimensional Intervention**



#### **Multidimensional Intervention**



**Developmental Trajectory**

**Figure 21.6** Why multidimensional interventions are necessary.

bioecological and psychosocial risks than to single isolated risks. For example, children exposed to societal violence are also more likely to experience reduced levels of social (e.g. family support networks) and physical resources (e.g., health services, nutrition) (Barber, 2013). When children are exposed to multiple proximal risks unidimensional interventions are less likely to be sufficient as an intervention strategy (Greenberg et al., 2001; Kraemer et al., 2001; Nation et al., 2003). Figure 21.6, derived from prevention science research (Brennan et al., 2003; Dodge & Pettit, 2003; Greenberg et al., 2001), illustrates that unidimensional intervention programs are less likely to be sufficient because interventions directed to reducing just one developmental risk may not reduce other developmental risks that continue to inhibit development.

### ***Implications for Application of the Process Dimension***

- For children exposed to multiple risk factors multidimensional-multilevel interventions are necessary. Existing examples include programs linking health and nutrition interventions to parent education, parent support and early child stimulation (Engle & Black, 2008) or integrating cash transfer programs for low income families with improvements in health and educational services (Lomeli, 2008).
- Level of risk exposure should be reduced for children exposed to high levels of cumulative risk *before* attempting interventions which provide exposure to promotive influences that facilitate development (Jaffee et al., 2007; Sameroff & Rosenblum, 2006).



- Choice of which risk or protective factors to target in an intervention program should be based on evidence identifying risk or protective factors linked to given outcomes (specificity), what risk or protective factors can be changed by intervention, and the degree of covariance among risk or protective influences (Wachs & Rahman, 2013).
- Supportive relations between positive microsystem elements should be enhanced to maximize the facilitative influence of the mesosystem (Ungar et al., 2013).
- Particularly in LAMI countries it is essential to promote coordination across health, nutrition, social service, and education ministries so as to facilitate the provision of multidimensional microsystem interventions (Engle & Black, 2008).
- In addition to evaluating developmental outcomes degree of reduction in cumulative risk exposure also can be used as an outcome measure (Gassman-Pines & Yoshikawa, 2006).

### Applications Based on Contextual Characteristics

Higher order distal characteristics can both structure the nature of lower order proximal processes or mesosystem links and can moderate the influence of lower order proximal processes upon development. Exemplifying higher-order moderation intervention programs which do not fit culturally based values or practices are less likely to be accepted by targeted communities and thus less likely to succeed (Harkness, Super, Mavridis, Barry, & Zeitlin, 2013; Nation et al., 2003).

### Implications for Application of the Context Dimension

- It is important to identify existing macrosystem barriers to microsystem intervention efforts *prior* to implementing interventions (Wachs & Rahman, 2013; Yousafzai et al., 2013). Known macrosystem barriers can include *cultural values or beliefs that have a poor fit* with current school or intervention practices (Dishion & Stormshak, 2007; G. Wright & Smith, 1998), culturally driven *status differences* based on person characteristics such as gender, which can influence who makes decisions in families or controls family resources (Rahman, 2007), and *social exclusion or social stigma* based on gender, caste, ethnicity, or having a child with disabilities (Cueto et al., 2012; Engle, 2012; S. Walker et al., 2011).
- To maximize the probability of success intervention programs should be designed with community values and beliefs as an essential element of the intervention

process (see Rahman, 2007, as an example of how this was accomplished in a program treating maternal depression in rural Pakistan). Alternatively, interventions could be designed to circumvent macrosystem barriers. For example, given that mothers are more likely than fathers to use economic resources in ways that benefit children's health and nutrition, some cash transfer programs in LAMI countries are now ensuring that funds are allocated directly to mothers (Lomeli, 2008).

- Interventions to strengthen facilitative mesosystem linkages also should include strategies to remove exosystem barriers to promoting such linkages *prior* to carrying out the intervention. For example, schools could implement more flexible scheduling of parent-teacher meetings and school events or provide transportation to school events for parents living in resource poor or dangerous neighborhoods (Heymann, 2000).

### Applications Involving the Chronosystem

Children are particularly sensitive to ecosystem influences during the early years of life because of rapid neural and behavioral growth during this time period. Ecosystem events occurring during the early years of life can increase or reduce the child's exposure and/or reactivity to later risk or protective influences. However, within a PPCT framework development is a continuous process that is not limited to just one age period. Interventions or experiences occurring in middle childhood, adolescence, and adulthood also can influence subsequent development and stabilizing the long-term impact of positive early influences may require exposure to later supportive experiences. Cumulative risk is a particularly salient influence on development and excessive time demands or time disruptions can adversely impact on family functioning.

### Implications for Applications of the Chronosystem Dimension

- Timing of interventions should be guided by when the behavioral and biological systems mediating behavioral development in specific domains are developing most rapidly rather than just by the age of the child (Wachs et al., 2014).
- Given that important biological and behavioral systems develop rapidly over the first 5 years particular emphasis should be placed on early biological or psychosocial interventions, which are likely to be stronger and more cost-effective than interventions occurring later in childhood (Heckman, 2000; Yousafzai et al., 2013).

- We cannot assume that exposure to early protective influences will “immunize” children against later risk exposures. To promote stability of benefits from exposure to early promotive influences, there needs to be continued monitoring of children’s developmental trajectories and the availability of follow-up intervention programs for children whose developmental trajectories begin to fall off.
- The need for continued monitoring and follow-up is essential for children living in stable high-risk settings where the likelihood of cumulative risk exposure is higher, or for children with developmental deficits who are reexposed to proximal processes that led to their initial problems (Ungar et al., 2013).
- Given that development is continuous it is not surprising to find evidence that time limited intervention programs are less likely to be developmentally effective than interventions continuing over time (Greenberg et al., 2001; Love et al., 2013; Reynolds & Temple, 1998).
- There is a need to develop strategies to reduce exosystem time pressures upon proximal processes. One such validated strategy would be re-defining the workplace culture to allow workers greater flexibility in scheduling their job responsibilities as a means of reducing work-family conflict (Kelly et al., 2011).

### Summary Conclusions: Application of the PPCT Bioecological Framework

Particularly for those working in the front lines of intervention efforts with disadvantaged families or with poverty populations in LAMI countries, the need for intervening in multiple domains, targeting interventions to specific groups of children and continuing intervention efforts for prolonged time periods may seem to reflect the academic ivory tower and not the nature of the real world, given the cost of implementing multidimensional, targeted, longitudinal interventions (Card et al., 2008) and the difficulties in taking research based intervention programs to scale (Aber, Brown, & Jones, 2003). However, promoting oversimplified solutions to complex real-world problems is not likely to produce meaningful change and, in the long run, may be less cost-effective than solutions that reflect the reality of the ecological conditions encountered by children from around the world. A fundamental thesis of this chapter is that a PPCT based bioecological approach, centered on the core principles initially presented, offers the most accurate picture of the child’s world and in so doing maximizes our

ability to both understand development and to promote optimal development for all children.

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