

# Child Development

Fifth Edition

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LAURA E.  
BERK

# Child Development

FIFTH EDITION

LAURA E. BERK

ILLINOIS STATE UNIVERSITY

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# In loving memory of my parents, Sofie and Philip Eisenberg

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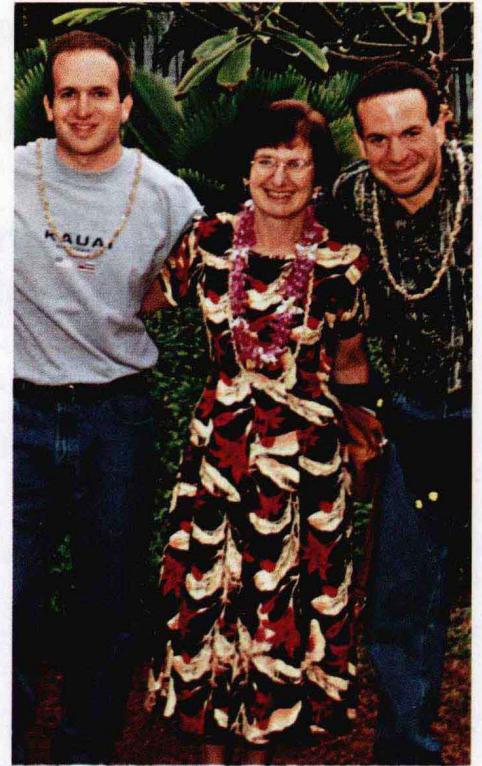
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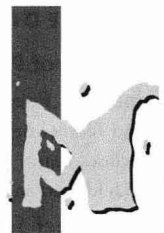
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Laura E. Berk is a distinguished professor of psychology at Illinois State University, where she teaches child development to both undergraduate and graduate students. She received her bachelor's degree in psychology from the University of California, Berkeley, and her master's and doctoral degrees in early childhood development and education from the University of Chicago. She has been a visiting scholar at Cornell University, UCLA, Stanford University, and the University of South Australia. Berk has published widely on the effects of school environments on children's development and, more recently, on the development of private speech. Her research has been funded by the U.S. Office of Education and the National Institute of Child Health and Human Development. It has appeared in many prominent journals, including *Child Development*, *Developmental Psychology*, *Merrill-Palmer Quarterly*, *Journal of Abnormal Child Psychology*, and *Development and Psychopathology*. Her empirical studies have attracted the attention of the general public, leading to contributions to *Psychology Today* and *Scientific American*. Berk has served as a research editor for *Young Children* and is a consulting editor for *Early Childhood Research Quarterly*. She is author of the chapter on the extracurriculum for the *Handbook of Research on Curriculum* (American Educational Research Association) and of the chapter on development for *The Many Faces of Psychological Research in the Twenty-First Century* (American Psychological Association). Her books include *Private Speech: From Social Interaction to Self-Regulation*, *Scaffolding Children's Learning: Vygotsky and Early Childhood Education*, and *Landscapes of Development: An Anthology of Readings*. In addition to *Child Development*, she is author of the best-selling texts *Infants, Children, and Adolescents* and *Development Through the Lifespan*, published by Allyn and Bacon.



Laura Berk with sons Peter and David



MY DECISION TO WRITE *Child Development* was inspired by a wealth of professional and personal experiences. First and foremost were the interests and needs of hundreds of students of child development with whom I have worked in nearly three decades of college teaching. I aimed for a text that is intellectually stimulating, that provides depth as well as breadth of coverage, that portrays the complexities of child development with clarity and excitement, and that is relevant and useful in building a bridge from theory and research to children's everyday lives. Instructor and student enthusiasm for the book not only has been among my greatest sources of pride and satisfaction, but also has inspired me to rethink and improve each edition.

The decade since *Child Development* first appeared has been a period of unprecedented expansion and change in theory and research. This fifth edition ushers in a new millenium with a wealth of new content that reflects four contemporary trends in the field:

- *Diverse pathways of change are highlighted.* Investigators have reached broad consensus that variations in biological makeup, everyday tasks, and the people who support children in mastery of those tasks lead to wide individual differences in children's skills. This edition pays more attention to variability in development and to recent theories—including ecological, sociocultural, and dynamic systems—that attempt to explain it. A new Variations feature grants special attention to this emphasis in contemporary research.
- *The interconnected roles of biology and environment are given greater emphasis.* Accumulating evidence on development of the brain, motor skills, cognitive competencies, temperament, and developmental problems underscores the way biological factors emerge in, are modified by, and share power with experience. The interconnection between biology and environment is revisited throughout the text narrative.
- *The link between theory, research, and applications—a theme of this book since its inception—is strengthened.* As researchers intensify their efforts to generate findings that can be applied to real-life situations, I have placed greater weight on social policy issues and sound theory- and research-based applications.
- *Inclusion of interdisciplinary research is expanded.* The move toward viewing the child's thoughts, feelings, and behavior as an integrated whole, affected by a wide array of influences in biology, social context, and culture, has motivated developmental researchers to strengthen their links with other fields of psychology and other disciplines. Topics and findings included in this edition increasingly reflect the contributions of educational psychology, social psychology, health psychology, clinical psychology, neuropsychology, biology, pediatrics, sociology, anthropology, and other fields.

#### TEXT PHILOSOPHY

The basic approach of this book has been shaped by my own professional and personal history as a teacher, researcher, and parent. It consists of seven philosophical ingredients that I regard as essential for students to emerge from a course with a thorough understanding of child development. Each theme is woven into every chapter:

- **1. AN UNDERSTANDING OF THE DIVERSE ARRAY OF THEORIES IN THE FIELD AND THE STRENGTHS AND SHORTCOMINGS OF EACH.** The first chapter begins by

emphasizing that only knowledge of multiple theories can do justice to the richness of child development. In each topical domain, I present a variety of theoretical perspectives, indicate how each highlights previously overlooked contributions to development, and discuss research that has been used to evaluate them. If one or two theories have emerged as especially prominent in a particular area, I indicate why, in terms of the theory's broad explanatory power. Consideration of contrasting theories also serves as the context for an evenhanded analysis of many controversial issues throughout the text.

■ **2. AN APPRECIATION OF BASIC RESEARCH STRATEGIES TO INVESTIGATE CHILD DEVELOPMENT.** To evaluate theories, students need a firm grounding in basic research design and methodology. I devote an entire chapter to a description and critique of research strategies. Throughout the book, numerous studies are discussed in sufficient detail for students to use what they have learned to critically assess the findings, conclusions, and implications of research.

■ **3. KNOWLEDGE OF BOTH THE SEQUENCE OF CHILD DEVELOPMENT AND THE PROCESSES THAT UNDERLIE IT.** Students are provided with a description of the organized sequence of development, along with a discussion of processes of change. An understanding of process—how complex combinations of biological and environmental events produce development—has been the focus of most recent research. Accordingly, the text reflects this emphasis. But new information about the timetable of change has also emerged. In many ways, children have proven to be far more competent than they were believed to be in the past. Current evidence on the timing and sequence of development, along with its implications for process, is presented throughout the book.

■ **4. AN APPRECIATION OF THE IMPACT OF CONTEXT AND CULTURE ON CHILD DEVELOPMENT.** A wealth of research indicates that children live in rich physical and social contexts that affect all aspects of development. In each chapter, the student travels to distant parts of the world as I review a growing body of cross-cultural evidence. The text narrative also discusses many findings on socioeconomically and ethnically diverse children within the United States. Besides highlighting the role of immediate settings, such as family, neighborhood, and school, I make a concerted effort to underscore the impact of larger social structures—societal values, laws, and government programs—on children's well-being.

■ **5. AN UNDERSTANDING OF THE JOINT CONTRIBUTIONS OF BIOLOGY AND ENVIRONMENT TO DEVELOPMENT.** The field recognizes more powerfully than ever before the joint roles of hereditary/constitutional and environmental factors—that these contributions to development combine in complex ways and cannot be separated in a simple manner. Numerous examples of how biological dispositions can be maintained as well as transformed by social contexts are presented throughout the book.

■ **6. A SENSE OF THE INTERDEPENDENCY OF ALL ASPECTS OF DEVELOPMENT—PHYSICAL, COGNITIVE, EMOTIONAL, AND SOCIAL.** Every chapter takes an integrated approach to understanding children. I show how physical, cognitive, emotional, and social development are interwoven. Within the text narrative and in a special series of Connections questions at the end of major sections, students are referred to other parts of the book to deepen their grasp of relationships between various aspects of change.

■ **7. AN APPRECIATION OF THE INTERRELATEDNESS OF THEORY, RESEARCH, AND APPLICATIONS.** Throughout this book, I emphasize that theories of child development and the research stimulated by them provide the foundation for sound, effective practices with children. The link between theory, research, and applications is reinforced by an organizational format in which theory and research are presented first, followed by implications for practice. In addition, a current focus in the field—harnessing child development knowledge to shape social policies that support children's needs—is reflected in every chapter. The text addresses the current condition of children in the United States and around the world and shows how theory and research have sparked successful interventions.



I have organized this text topically, in a manner best suited to a comprehensive discussion of theory, research, and applications and an uninterrupted view of development within each domain. The book retains the same basic structure that received praise from users in its previous editions. It is divided into 5 parts and 15 chapters.

■ **PART I. THEORY AND RESEARCH IN CHILD DEVELOPMENT.** This section provides an overview of the history of the field, twentieth-century theories, and research strategies. **Chapter 1** stresses the importance of theories as organizing frameworks for understanding child development and traces changes in views of childhood from medieval to modern times. The study of child development is depicted as an interdisciplinary endeavor that aims to both understand children and improve their life conditions. **Chapter 2** is devoted to strategies for conducting scientifically sound research. Commonly used research methods and both general and developmental research designs are explained and critiqued. The chapter concludes with a consideration of ethics in research on children.

■ **PART II. FOUNDATIONS OF DEVELOPMENT.** A trio of chapters introduces students to the foundations of development. **Chapter 3** combines a discussion of genetic mechanisms and prenatal and perinatal environmental influences into a single, integrated discussion of these earliest determinants of development. A concluding section takes up the various ways in which researchers conceive of the relationship between heredity and environment, as a prelude to revisiting the nature–nurture controversy in later chapters. **Chapter 4** is devoted to an overview of the rapidly expanding literature on infant capacities. Research on newborn reflexes, states, and learning is reviewed, followed by a consideration of early motor and perceptual development. The chapter closes with the question of whether infancy is a sensitive period in which certain experiences must occur to ensure healthy development. **Chapter 5** addresses physical growth, including development of the brain, and emphasizes the close connection between physical and psychological development. A variety of hereditary and environmental influences on physical growth are considered. A special section focuses on puberty and its diverse consequences for adolescent health and well-being.

■ **PART III. COGNITIVE AND LANGUAGE DEVELOPMENT.** Four chapters examine the diverse theories and wealth of research on cognitive and language development. **Chapter 6** is devoted to Piaget’s cognitive-developmental theory and Vygotsky’s socio-cultural theory. Students receive a thorough grounding in Piagetian theory as a prerequisite to studying language, emotional, and social-cognitive development in later chapters. With its strong emphasis on the social context of cognition, Vygotsky’s theory has risen to the forefront of the field and therefore shares the title of Chapter 6. The chapter also introduces the nativist, modular view of the mind. **Chapter 7** offers an introduction to information processing. General and developmental models are reviewed, along with research on each major facet of the information-processing system. The chapter also discusses recent applications of information processing to children’s academic learning and concludes with an analysis of the strengths and weaknesses of the information-processing perspective. **Chapter 8**, on intelligence, provides an overview of the intelligence-testing movement and addresses a wide variety of controversial issues and research findings, including ethnic and socioeconomic differences in IQ, heritability of intelligence, cultural bias in the tests, and early intervention for economically disadvantaged children. The concluding section considers the development of creativity. **Chapter 9** provides a comprehensive introduction to language development, including behaviorist, nativist, and interactionist theories. The main body of the chapter is organized around the four components of language: phonology, semantics, grammar, and pragmatics. The chapter also answers such questions as, Can nonhuman primates acquire language? Is there a sensitive period for language learning? How does bilingualism affect children’s development?

■ **PART IV. PERSONALITY AND SOCIAL DEVELOPMENT.** Coverage of personality and social development is divided into four chapters: **Chapter 10**, on emotional development, provides an overview of theory and research on children's expression and understanding of emotion, the origins of temperament and its implications for cognitive and social development, and infant–caregiver attachment. The influence of quality of caregiving, infant temperament, parents' internal working models, maternal employment and child care, and social and cultural contexts on the attachment bond are among the issues considered. **Chapter 11**, offering an overview of the development of social cognition, is divided into three sections: children's understanding of self, other people, and relationships between people. Among the topics included are young children's theory of mind; self-concept and self-esteem; achievement-related attributions; identity; perspective taking; friendship; and social problem solving. **Chapter 12** addresses moral development. The main body of the chapter is devoted to a review of sociobiological, psychoanalytic, social learning, and cognitive-developmental theories and related research. Child-rearing practices that foster conscience development; cross-cultural research on moral reasoning; the controversial issue of whether males and females differ in moral understanding; children's ability to distinguish the moral, social-conventional, and personal domains; and the development of self-control and aggression are among the features of this chapter. **Chapter 13** focuses on sex-related differences and gender roles. Biological and environmental influences on gender stereotyping and gender-role adoption, diverse theories and research on the development of gender identity, and sex-related differences in mental abilities and personality traits are discussed. The chapter also includes an applied section on developing non-gender-stereotyped children.

■ **PART V CONTEXTS FOR DEVELOPMENT.** A final pair of chapters examines four influential contexts for development—family, peers, media, and schooling. **Chapter 14** considers the family from an evolutionary and a social systems perspective. The bidirectional nature of parent–child interaction, the importance of links between the family and community for children's well-being, and styles of child rearing are highlighted. The central portion of this chapter discusses the impact of family lifestyles and transitions on children's development. It includes expanded treatment of family diversity—such as smaller families, one-child families, gay and lesbian families, never-married single-parent families, and adoptive families—and sections on divorce, remarriage, maternal employment, and child care. The chapter concludes with a discussion of child maltreatment. In **Chapter 15**, the social systems perspective is extended to extrafamilial contexts for development. In the section on peer relations, research on the development of peer sociability, peer acceptance, peer groups, and peers as socialization agents is discussed. The middle portion of the chapter addresses the impact of television and computers on cognitive and social development. A concluding section on schooling considers such topics as class and student body size, educational philosophies, school transitions, teacher–pupil interaction, grouping practices, mainstreaming and full inclusion, and cross-national research on academic achievement.

#### NEW COVERAGE IN THE FIFTH EDITION

In this edition I continue to represent a rapidly transforming contemporary literature with theory and research from over 1,700 new citations. To make room for new coverage, I have condensed and reorganized some topics and eliminated others that are no longer as crucial in view of new evidence. The following is a sampling of major content changes, organized by chapter (a more complete description of changes can be found in the Annotated Instructor's Manual that accompanies the text):

- **Chapter 1:** Revised section on basic issues on which major theories take a stand; new From Research to Practice box on social change and the popular literature on parenting; new section on development as a dynamic system.
- **Chapter 2:** New section on methods for studying culture; new Variations box on case studies of prodigies; new example of longitudinal-sequential research; all research strategies richly illustrated with real studies.



- **Chapter 3:** New Social Issues box on the Human Genome Project; expanded attention to fetal sensory and behavioral capacities; new Variations box on fetal activity as a predictor of infant temperament; updated research on teratogens; new research on the role of paid employment leave in safeguarding the well-being of mothers and newborn babies.
- **Chapter 4:** Expanded attention to dynamic systems theory of motor development and related research; new section on infant perception of balance and self-movement; new Variations box on development of infants with severe visual impairments.
- **Chapter 5:** New section on gross motor development in childhood and adolescence; updated research on brain lateralization; expanded discussion of obesity, including cross-cultural research highlighting the role of Western high-fat diets; new Variations box on coming out among homosexual youths; new evidence on prevention of and intervention in adolescent parenthood.
- **Chapter 6:** Updated evidence on representation in infancy, including categorization and analogical problem solving; new research on the development of drawing, including cultural variations; enhanced discussion of categorization in early childhood, including contributions of language, general knowledge, and adult teaching; new Variations box on parent–child interaction and cognitive development of deaf children; expanded discussion of Vygotsky and education, including the impact of culture on cooperative learning and a new section on the classroom as a community of learners.
- **Chapter 7:** Revised section on developmental models of information processing, including Case’s neo-Piagetian theory, connectionism, and Siegler’s model of strategy choice; new From Research to Practice box on speech–gesture mismatches in children’s problem solving and consequent educational implications; new section on cognitive inhibition; enhanced discussion of the development of autobiographical memory; expanded treatment of information processing and academic learning, including reading, mathematics, and scientific reasoning.
- **Chapter 8:** Enhanced discussion of genetic and nonshared environmental influences on IQ; new section challenging the assumption that genetic racial differences determine ethnic differences in psychological traits; expanded attention to dynamic testing; new From Research to Practice box on authentic assessment; new evidence on academic achievement of immigrant ethnic minority adolescents; new evidence on early intervention and intellectual development.
- **Chapter 9:** New evidence on the capacity of apes to acquire language; new Variations box on language development in children with Williams syndrome, with implications for nativist theory; updated findings on the role of language learning in brain lateralization; new evidence on how child-directed speech and adult–child conversations promote language development; recent research on strategies for acquiring vocabulary and grammar; revised Social Issues box on bilingual education.
- **Chapter 10:** Updated and expanded sections on the development of emotional self-regulation and empathy; new Cultural Influences box on father–infant relationships among the Aka hunter–gatherers of Central Africa; updated discussion of the impact of infant–mother attachment security on later development; revised section on maternal employment and infant child care, including findings of the NICHD Study of Early Child Care.
- **Chapter 11:** Expanded attention to development of the I-self and me-self; new section on the role of language in early self-development, addressing the categorical and remembered selves; updated discussion of the young child’s theory of mind; new Variations box on “mindblindness” and infantile autism; expanded attention to development of self-concept and self-esteem, including the role of social comparison; revised and updated section on development of achievement-related attributions; expanded discussion of person perception, with a new section on children’s understanding of ethnicity and social class.

- **Chapter 12:** New evidence on children’s active, positive contribution to the process of moral internalization; enhanced discussion of the importance of a warm, cooperative parent–child relationship for conscience development; revised section on culture and moral reasoning, addressing both universals and variations; expanded discussion of children’s capacity to distinguish moral imperatives, social conventions, and matters of personal choice; revised consideration of the development of aggression, including the distinction between overt and relational aggression; new Variations box on two routes to adolescent delinquency.
- **Chapter 13:** Current findings on children with congenital adrenal hyperplasia; new evidence on sex-related differences in parental autonomy-granting in middle childhood; updated evidence on boys’ and girls’ styles of social influence; revised and expanded section on development of gender identity in adolescence; new Variations box on sex-related differences in spatial skills and their implications for mathematical reasoning; new section on sex-related differences in adolescent depression; updated findings on sex-related differences in overt and relational aggression.
- **Chapter 14:** New From Research to Practice box on the transition to parenthood; new findings on ethnic variations in child-rearing practices; enhanced discussion of identity development in transracially and transculturally adopted children; new section on children’s development in never-married, single-parent families; new Variations box on grandparents rearing grandchildren: the skipped-generation family.
- **Chapter 15:** New findings on characteristics of rejected-aggressive and rejected-withdrawn children; new Variations box on peer victimization; updated research on the impact of television and computers on children’s social and cognitive development, with enhanced attention to videogames and the Internet; expanded section on Vygotsky-inspired directions in education; new evidence on factors affecting adjustment to kindergarten; updated research on educational self-fulfilling prophecies; new Social Issues box on school desegregation and life chances of African-American adolescents; revised section on elementary school grouping practices, including multigrade classrooms; discussion of both mainstreaming and full inclusion; new section on parent–school partnerships.

## INSTRUCTOR’S SUPPLEMENTS

A variety of teaching tools are available to assist instructors in organizing lectures, planning demonstrations and examinations, and ensuring student comprehension.

- **ANNOTATED INSTRUCTOR’S MANUAL (AIM)** This convenient teaching tool provides Learning Objectives, Test Bank Item numbers, references to Lecture Extensions and Learning Activities, answers to “Ask Yourself . . .” and “Connections” questions, and other instructors’ annotations keyed to reduced versions of actual text pages. It also offers a chapter summary, list of new material, and Chapter-at-a-Glance grid for each chapter.

- **INSTRUCTOR’S RESOURCE MANUAL (IRM)** Prepared by Gabrielle Principe of North Carolina State University, Betty Nylund Barr, and myself, this thoroughly revised IRM contains additional material to enrich your class presentations. For each chapter, the IRM provides a Brief Chapter Summary, detailed Lecture Outline, Lecture Extensions, Learning Activities, Suggested Readings, and Media Materials.

- **TEST BANK** Prepared by Gabrielle Principe of North Carolina State University and Naomi Tyler of Vanderbilt University, the test bank contains over 2,000 multiple-choice questions, each of which is cross-referenced to a Learning Objective, page-referenced to chapter content, and classified by type (factual, applied, or conceptual); essay questions; and premade tests.

- **COMPUTERIZED TEST BANK** This computerized version of the test bank is available in Windows and Macintosh formats using Test Manager, the best-selling test-generation software.

■ **TRANSPARENCIES** Over 200 full-color transparencies taken from the text and other sources are referenced in the margins of the Annotated Instructor's Manual for the most appropriate use in your classroom presentations.

■ **SEASONS OF LIFE VIDEO SERIES** Illustrating the text's interdisciplinary focus, this five-video series explores a multitude of biological, psychological, and social influences on development. Nearly 75 psychologists, biologists, sociologists, and anthropologists present theory, methods, and research. Your publisher's representative can provide you with details on class enrollment restrictions.

■ **FILMS FOR THE HUMANITIES AND SCIENCES: CHILD DEVELOPMENT VIDEO-TAPE** Complementing the text's linkage of theory and research to application, this revised videotape features high-interest segments on topics such as genetic counseling, fetal alcohol syndrome, the child's theory of mind, and teen depression.

■ **"CHILD DEVELOPMENT IN ACTION" OBSERVATION PROGRAM** In conjunction with the Illinois State University Television Production Studio, I have revised and expanded this real-life videotape, containing hundreds of observation segments that illustrate the many theories, concepts, and milestones of child development. An Observation Guide helps students use the video in conjunction with the textbook, deepening their understanding of the material and applying what they have learned to everyday life. The videotape and Observation Guide are free to instructors who adopt the text and are available to students at a discount when packaged with the text.

■ **WEBSITE** <http://www.abacon.com/berk> Designed for students and faculty of Child Development and Human Development or Lifespan classes, this comprehensive website encourages online and interactive learning and also offers current links and information about development. It includes an Online Study Guide, a Teaching Aids section, and a variety of additional features.

## ACKNOWLEDGMENTS

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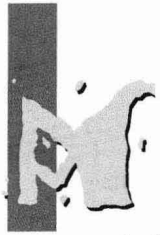
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A final word of gratitude goes to my family, whose love, patience, and understanding have enabled me to be wife, mother, teacher, researcher, and text author at the same time. My sons, David and Peter, grew up with my child development texts, passing from childhood to adolescence and then to young adulthood as successive editions were written. David has a special connection with the books' subject matter as an elementary school teacher; Peter embarked on the study of law as I prepared this edition. Both continue to enrich my understanding through reflections on events and progress in their own lives. My husband, Ken, willingly made room for this time-consuming endeavor in our life together and communicated his belief in its importance in a great many unspoken, caring ways.

Laura E. Berk



My 29 years of teaching child development have brought me in contact with thousands of students like you—students with diverse college majors, future goals, interests, and needs. Some are affiliated with my own department, psychology, but many come from other child-related fields—education, sociology, anthropology, family studies, and biology, to name just a few. Each semester, my students' aspirations have proven to be as varied as their fields of study. Many look toward careers in applied work with children—teaching, caregiving, nursing, counseling, social work, school psychology, and program administration. Some plan to teach child development, and a few want to do research. Most hope someday to have children, whereas others are already parents who come with a desire to better understand and rear their own youngsters. And almost all arrive with a deep curiosity about how they themselves developed from tiny infants into the complex human beings they are today.

My goal in preparing this fifth edition of *Child Development* is to provide a textbook that meets the instructional goals of your course as well as your own personal needs. I aimed for a text that is intellectually stimulating, that provides depth as well as breadth of coverage, and that portrays the complexities of child development in a way that will capture your interest while helping you learn.

To achieve these objectives, I have grounded this book in a carefully selected body of classic and current theory and research. In addition, the text highlights the joint contribution of biology and environment to development, explains how the research process helps solve real-world problems, highlights commonalities and differences between ethnic groups and cultures, and pays special attention to policy issues that are crucial for safeguarding children's well-being in today's world. I have also used a clear, engaging writing style and provided a pedagogical program that will assist you in mastering information, integrating the various aspects of development, critically examining controversial issues, and applying what you have learned.

#### PEDAGOGICAL FEATURES

Maintaining a highly accessible writing style—one that is lucid and engaging without being simplistic—continues to be one of this text's goals. I will frequently converse with you and encourage you to relate what you read to your own life. In doing so, I hope to make the study of child development involving and pleasurable.





### Father-Infant Relationships Among the Aka

**CULTURAL INFLUENCES**

**A**MONG THE AKA hunters and gatherers of Central Africa, fathers devote more time to infants than in any other known society. Observations reveal that Aka fathers are within arm's reach of their babies more than half the day. They pick up and cuddle their babies at least five times more often than do fathers in other African hunting-and-gathering societies.

Why are Aka fathers so involved with their babies? Research shows that when husband and wife help each other with many tasks, fathers assist more with infant care. The relationship between Aka husband and wife is unusually cooperative and intimate. Throughout the day, they are hunting, food preparation, and social and leisure activities. Babies are brought along on hunts, and mother find it hard to carry them long distances. This explains, in part, why fathers spend so much time holding their infants. But when the Aka return to the campground, fathers continue to devote many hours to infant caregiving. The more Aka parents are together, the greater the father's interaction with his baby (Hewlett, 1992).



This Aka father spends much time in close contact with his baby. In Aka society, husband and wife share many tasks of daily living and have an unusually cooperative and intimate relationship. Infants are generally within arm's reach of their fathers, who devote many hours to caregiving. (Hewlett)

In the most extensive longitudinal study of this kind, Alan Sroufe and his collaborators reported that preschoolers who were securely attached to babies showed more elaborate make-believe play and greater enthusiasm, flexibility, and persistence in problem solving by 2 years of age. At age 4, such children were rated by their preschool teachers as high in self-esteem, socially competent, cooperative, popular, and empathic. In contrast, their avoidantly attached siblings were viewed as isolated and disconnected, and those who were resistantly attached were regarded as disruptive and difficult. Studied again at age 11 in summer camp, children who were secure as infants had more favorable relationships with peers, closer friendships, and better social skills, as judged by camp counselors (Elicker, England, & Sroufe, 1992; Matas, Engel, & Sroufe, 1978; Shulman, Elicker, & Sroufe, 1994).

These findings have been taken by some researchers to mean that secure attachment in infancy causes improved cognitive, emotional, and social competence during later years. Yet more evidence is needed before we can be certain of this conclusion. Other short-term longitudinal studies yield a mixed picture: secure infants do not always show more favorable development than their insecure counterparts (Belsky & Cassidy, 1994). And one long-term study revealed that attachment at age 1 did not predict psychological adjustment at age 18 (Lewis, 1997).

Why is research on the long-term consequences of attachment quality as yet unclear? Michael Lamb and his colleagues (1983) suggest that continuity of caregiving determines whether attachment security is linked to later development. When parents respond sensitively not just in infancy but during later years, children are likely to develop favorably. In contrast, children of parents who react insensitively for a long time are at increased risk for maladjustment. In support of this interpretation, a closer look at Sroufe's longitudinal study reveals that in the few instances in which securely attached infants did develop later behavior problems, their mothers became less positive and supportive in early childhood. Similarly, the handful of insecurely attached babies who became well-adjusted preschoolers had mothers who were sensitive and provided their young children with clear structure and guidance (Egeland et al., 1996; Thompson, 1998).

legally binding human rights treaty to recognize the civil, political, economic, social, and cultural rights of children; and regulating children's television, addressing societal obstacles to controlling harmful TV and providing strategies parents can use to protect their children.

children with hearing and visual impairments, language development in children with Williams syndrome, "mindblindness" and infantile autism, and peer victimization.

- **Cultural Influences** boxes highlight the impact of context and culture on all aspects of development. They include such topics as Father-Infant Relationships among the Aka, a hunter-gatherer people of Central Africa, addressing the importance of a warm marital bond for infant-father attachment; and the impact of ethnic and political violence on children, emphasizing the importance of parental and community supports in safeguarding children's development.
- **Social Issues** boxes discuss the condition of children in the United States and around the world and stress the need for sensitive social policies to ensure their well-being. They include the U.N. Convention on the Rights of the Child, the first

### Bilingual Education

**SOCIAL ISSUES**

**V**INCENTE, A 7-YEAR-OLD boy who recently immigrated from Mexico to the United States, attends a bilingual education classroom in a large American city. His English, Serena, is fluent in both Spanish and English. At the beginning of the year, Serena instructed Vincente and his classmates in their speaking youngsters of school and in the community, they quickly picked up English phrases, such as "My name is . . .," "I want," and "Show me."

Serena reinforced her pupils' efforts to speak English, helping them feel confident about communicating in a second language. Gradually, she introduced more English into classroom learning experiences. At the same time, she continued to strengthen the children's native language and culture.

Vincente is enrolled in one of many bilingual education programs serving the growing number of American children with limited proficiency in English. Yet the question of how Vincente and his classmates should be taught continues to be hotly debated.

On one side of the controversy are those who believe that Vincente should be instructed only in English. According to this view, time spent communicating in the child's native tongue detracts from English language achievement, which in education, business, and everyday life.

On the other side are educators like Serena, who are committed to truly bilingual education—developing Vincente's native language while fostering his mastery of English. Supporters of this view believe that providing instruction in the native tongue lets minority children know that their heritage is respected (McGuire, 1992). In addition, by avoiding abrupt submission to an English-speaking environment, bilingual education prevents *acculturation*, or inadequate proficiency in both languages. When minority children experience a gradual decline of the first language as a result of being taught the second, they end up limited in both languages for a period of time, a circumstance that leads to serious academic difficulties. *Semilingualism* is one factor believed to contribute to the high rates of school failure and dropout among low-income Hispanic youngsters, who make up nearly 20 percent of the American language minority population.

At present, public opinion sides with the first of these two opinions. Many states have passed laws declaring

English to be their official language, creating conditions in which schools have no obligation to teach minority pupils in languages other than English. In 1998, California voters passed a law that eliminated bilingual education in favor of a one-year, English-only immersion course for non-English-speaking pupils, a move expected to spread to other states. Yet research underscores the value of instruction in the child's native tongue. In classrooms where both languages are involved in learning, minority children are more active, and acquire the second language more easily. In contrast, when teachers speak only a language their pupils can barely understand, children display frustration, boredom, and academic failure (Crawford, 1995, 1997), recognize the linguistic rights of its French-speaking minority groups is intense. Nevertheless, both English and French are fluent in both—ideal conditions for building greater ethnic harmony (Patt, 1993).

These Pueblo children attend a bilingual education program in which they receive instruction in their native language and in English. As a result of the curriculum, ethnic minority children are more involved in learning, participate more actively in class discussions, and acquire the second language more easily. (Patt & Desmarais/Top View Images)

- **From Research to Practice** boxes integrate theory, research, and applications. They include speech-gesture mismatches in problem solving and implications for children's readiness to learn, children's understanding of the death, and maternal depression and child development.

### Long-Term Impact of Early Hearing Loss on Development: The Case of Otitis Media

**FROM RESEARCH TO PRACTICE**

**D**URING HIS FIRST year in day care, 18-month-old Alex caught five colds, had the flu on two occasions, and experienced repeated otitis media (middle ear infection). Alex is not unusual. By age 3, over 70 percent of children have had respiratory illnesses resulting in at least one bout of otitis media. Some episodes are painful, but as many as half are accompanied by few or no symptoms. Parents learn or more about otitis media from their doctor. Although three of them only on antibiotics responsible for otitis media, antibiotics eliminate the bacteria responsible for otitis media, which causes fluid buildup in the middle ear, which causes mild to moderate hearing loss that can last for weeks or months (Ferguson & Proctor, 1994).

The incidence of otitis media is greatest between 6 months and 3 years, when children are first acquiring language. Frequent infections predict delayed language progress and social interaction in early childhood and poorer academic performance after school entry (Ferguson & Proctor, 1994; Teete et al., 1990; Vernon-Ferguson, Manlow, & Welling, 1994).

How might otitis media affect language and academic progress? Difficulties in hearing speech sounds, particularly in noisy settings, may be responsible. Early and recurrent episodes of infection and production (Ferguson & Proctor, 1994; Gave & Wallace, 1992). Furthermore, children who with many bouts are less attentive to the speech of others and less persistent at tasks (Ferguson et al., 1981; Roberts, Burchinal, & Campbell, 1994). When children have due to repeated instances in which they could not make out what people around them were saying. When children have trouble paying attention, they may reduce the quality of others' interactions with them. In one study, mothers of preschoolers with frequent illness were less effective in teaching their child a task (Chase et al., 1995).

Current evidence argues strongly in favor of early prevention of otitis media, especially since the illness is so widespread. Cooled hand contact and exposure to cigarette smoke and other pollutants are linked to the disease-factors that probably account for its high incidence among low-income children. In addition, enrollment of millions of infants and young children in child care creates opportunities for close contact, greatly increasing the number of otitis media episodes among these children (Froom & Culpenter, 1991).

Negative developmental outcomes of early otitis media can be prevented in the following ways:

- Preventive doses of *xylocaine*, a sweetener derived from birch bark. A recent Finnish study revealed that children in child-care centers given a daily dose of xylocin in gum or syrup form show a 30- to 40-percent drop in otitis media compared with controls receiving gum or syrup without the sweetener. Xylitol appears to have natural, bacteria-fighting ingredients (Ukari, Korhonen, & Niemela, 1998). However, dosage must be carefully monitored, since too much xylitol can cause abdominal pain and diarrhea.
- Frequent screening of infants and preschoolers for the disease, followed by prompt medical intervention. (Plastic tubes that drain the inner ear are often used to treat chronic otitis media, although their effectiveness remains controversial.)
- Regular cleaning and arrangement of child-care settings to control infection. Because infants and young children often put toys in their mouths, these objects should be rinsed frequently with a disinfectant solution. Spacious, well-ventilated rooms and small group sizes also limit the spread of disease.
- Verbally stimulating adult-child interaction. Developmental problems associated with otitis media are reduced or eliminated in high-quality child-care centers where caregivers are verbally stimulating and keep noise to a minimum, children have more opportunities to hear spoken language (Ferguson, Kipp, & Blood, 1994; Roberts, Burchinal, & Campbell, 1994).

High-quality child-care centers reduce or eliminate otitis media, and later academic difficulties associated with frequent bouts of otitis media. These toddlers profit from verbally stimulating caregivers and a small group size, which ensures a relatively quiet environment where spoken language can be heard easily. (Bauer/Corbis/Top Image Images)

■ **MILESTONES TABLES.** Milestones tables summarize major developments within each topical area, providing a convenient overview of the chronology of development.

### Some Cognitive Attainments of Childhood and Adolescence

**MILESTONES**

Age	Cognitive Attainment
<b>Early Childhood</b> 2-4 years	<ul style="list-style-type: none"> <li>• Dramatic expansion of representational activity, as indicated by drawings, make-believe play, drawings, and understanding of spatial symbols (photographs, simple maps, and models)</li> <li>• Takes the perspective of others in simplified, familiar situations and in everyday communication</li> <li>• Distinguishes animate beings from inanimate objects; denies that magic can alter everyday experiences</li> <li>• Conducts many more categories on the basis of common function and behavior; readily draws inferences about nonobvious characteristics that category members share</li> <li>• Differentiates global categories into superordinate, basic-level, and subordinate categories</li> </ul>
<b>4-7 years</b>	<ul style="list-style-type: none"> <li>• Displays complex sociodramatic play and creates more realistic drawings, which begin to depict the third dimension</li> <li>• Replaces magical beliefs about fairies, goblins, and events that violate expectations with plausible explanations</li> <li>• Notices transformation, thinks reversibly, and explains events causally in familiar situations</li> <li>• Shows improved ability to distinguish appearance from reality</li> </ul>
<b>Middle Childhood</b> 7-11 years	<ul style="list-style-type: none"> <li>• Thinks in a more organized, logical fashion about concrete, tangible information, as indicated by the ability to pass Piagetian conservation, class inclusion, and seriation problems, including transitive inference</li> <li>• Shows improved understanding of spatial concepts, as indicated by conservation of distance, ability to give clear directions, and well-organized cognitive maps</li> <li>• Displays the horizontal décalage—sequential mastery of logical reasoning in different content areas</li> </ul>
<b>Adolescence</b> 11-20 years	<ul style="list-style-type: none"> <li>• Reasons abstractly in situations that offer many opportunities for hypothetical-deductive reasoning and propositional thought</li> <li>• Displays the imaginary audience and personal fable, which are strongest in early adolescence and gradually decline</li> </ul>

Note: These milestones represent overall age trends. Individual differences exist in the precise age at which each milestone is attained.

set of schemes, such as large, medium, small. They arrive at the correct answer by merging the novel elements with the familiar structure stick A—large, stick B—medium, stick C—small. When encouraged to construct this type of analogy, even 3- and 4-year-olds can solve some transitive inference problems (Goswami, 1995).

Fligel referred to the abilities we have considered so far—conservation, hierarchical classification, and seriation—as *agonostereometric operations*—thought they were responsible for the school-age child's increased facility with quantitative tasks. As we will see in Chapter 7 when we consider the development of mathematical reasoning, preschoolers have some impressive numerical skills, including the ability to count, read arrays and add and subtract small sets of items. But most mathematical knowledge is acquired after early childhood. Elementary school children have a more quantitative, measurement-oriented approach to many tasks than do preschoolers.

■ **ADDITIONAL TABLES, ILLUSTRATIONS, AND PHOTOGRAPHS.** Additional tables are liberally included to help readers grasp essential points in the text discussion, extend information on a topic, and consider applications. The many full-color illustrations throughout the book depict important theories, methods, and research findings. In this edition, the photo program has been carefully selected to portray the text discussion and to represent the diversity of children in the United States and around the world.

■ **MARGINAL GLOSSARY, END-OF-CHAPTER TERM LIST, AND END-OF-BOOK GLOSSARY.** Mastery of terms that make up the central vocabulary of the field is promoted through a marginal glossary, an end-of-chapter term list, and an end-of-book glossary. Important terms and concepts also appear in boldface type in the text narrative and in the end-of-chapter summaries.

## STUDY AIDS

Beyond the study aids found in the textbook, Allyn and Bacon offers a number of supplements for students. The website is open to all visitors to the Internet.

■ **STUDY GUIDE.** Prepared by Leslie M. Bach, Jessica L. Friedberg, and myself, this helpful guide offers Chapter Summaries, Learning Objectives, Study Questions organized according to major headings in the text, “Ask Yourself . . .” and “Connections” questions that also appear in the text margin, crossword puzzles for mastering important terms, and multiple-choice self-tests.

■ **PRACTICE TESTS.** Twenty multiple-choice items per chapter plus an answer key with justifications are drawn from the test bank to assist you in preparing for course exams.

I hope that learning about child development will be as rewarding for you as I have found it over the years. I would like to know what you think about both the field of child development and this book. I welcome your comments; please feel free to send them to me at Department of Psychology, Box 4620, Illinois State University, Normal, IL 61790, or care of the publisher, who will forward them to me.

Laura E. Berk