Childhood

SIXTH EDITION

VOYAGES IN DEVELOPMENT

SPENCER A. RATHUS

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THE COLLEGE OF NEW JERSEY

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***Childhood: Voyages in Development*, Sixth Edition**
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To Allyn, Jordan,
Taylor, and March
(the child, not the month)

About the Author

The author is shown at various stages of development in these four photgraphs

Spencer A. Rathus

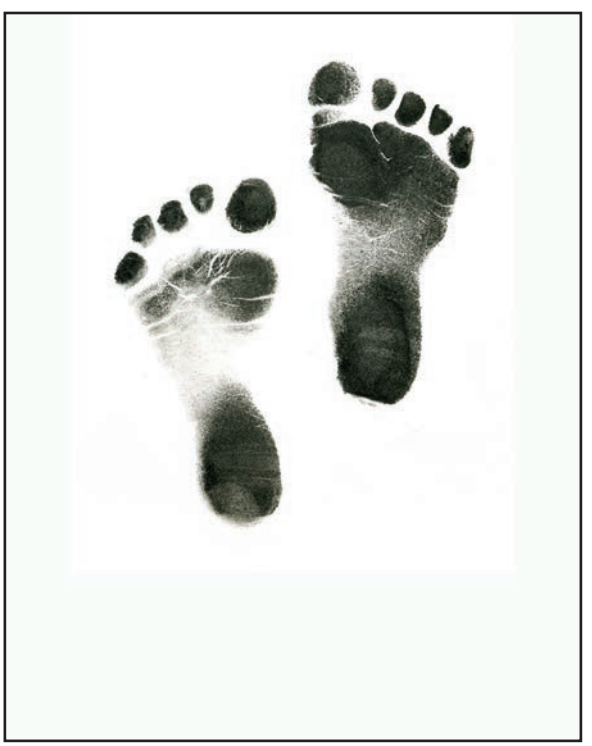
Numerous personal experiences enter into Rathus's textbooks. For example, he was the first member of his family to go to college, and he found college textbooks to be cold and intimidating. Therefore, when his opportunity came to write college textbooks, he wanted them to be different—warm and encouraging, especially to students who were also the first generation in their families to be entering college. Rathus's first professional experience was in teaching high school English. Part of the task of the high school teacher is to motivate students and make learning fun. Through this experience he learned the importance of using humor and personal stories, which later became part of his textbook approach. Rathus wrote poetry and novels while he was an English teacher, and some of the poetry was published in poetry journals. The novels never saw the light of day (which is just as well, Rathus now admits in mock horror).

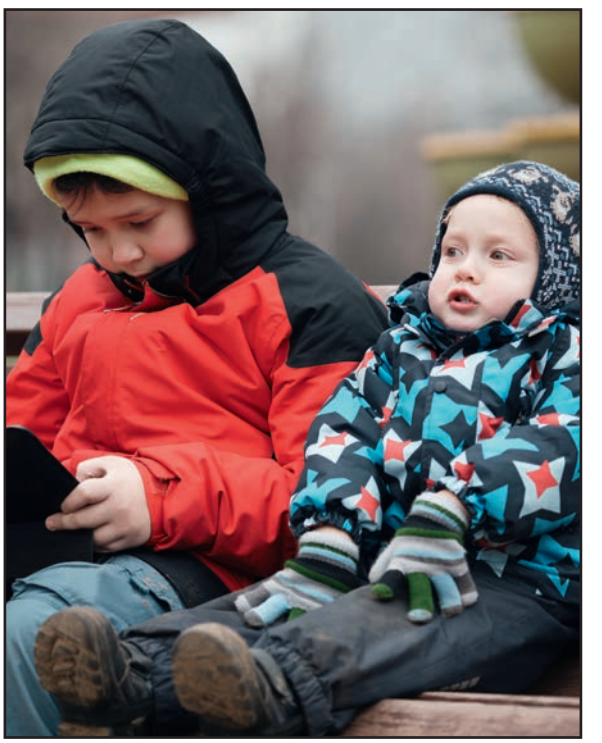
Rathus earned his Ph.D. in psychology and he entered clinical practice and teaching. He went on to publish research articles in journals such as *Adolescence, Behavior Therapy, Journal of Clinical Psychology, Behaviour Research and Therapy, Journal of Behavior Therapy and Experimental Psychiatry,* and *Criminology*. His research interests lie in the areas of human growth and development, psychological disorders, methods of therapy, and psychological assessment. Foremost among his research publications is the Rathus Assertiveness Schedule, which remains widely used in research and clinical practice. Rathus has since poured his energies into writing his textbooks, while teaching at Northeastern University, New York University, and currently at The College of New Jersey. His introductory psychology textbook, *Psychology: Concepts and Connections,* is soon to be in its eleventh edition.

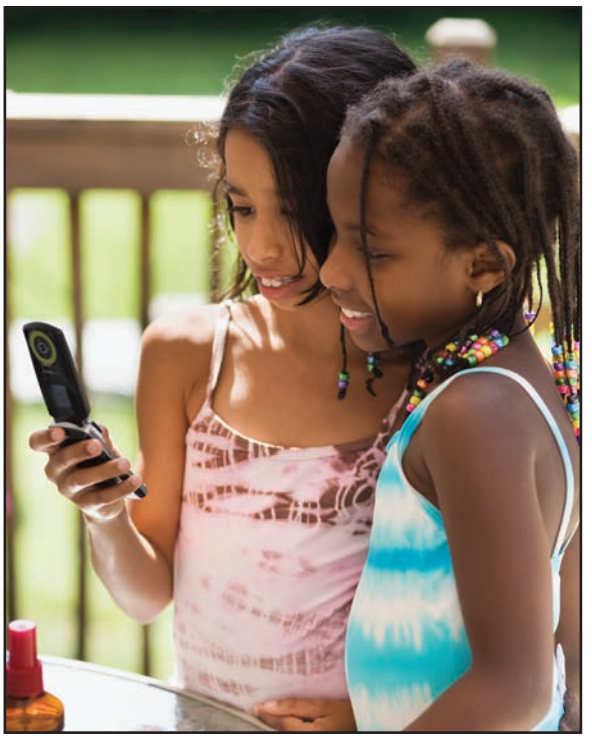
Rathus is proud of his family. His wife, Lois, is a successful author and a professor of art at The College of New Jersey. Their daughter, Allyn, obtained her M.A. from NYU's Steinhardt School, and is teaching in New York City. Their daughter, Jordan, completed her MFA in fine arts at Columbia University and is launching her career as a video artist. Their youngest daughter, Taylor, can dance the pants off both of them. Taylor completed her BFA at NYU's Tisch program in musical theatre and is lighting up the stage. Rathus's eldest daughter, Jill, has become a psychologist and teaches at C. W. Post College of Long Island University.

Brief Contents

Contents







Preface

My heart leaps up when I behold
A rainbow in the sky:
So was it when my life began;
So is it now I am a man;
So be it when I shall grow old,
Or let me die!
The Child is father of the Man;
And I could wish my days to be
Bound each to each by natural piety.
William Wordsworth, 1802

Yes, the child is father of the man and, no less certainly, the mother of the woman. In our children, we have the making of ourselves. In children, parents have the most impetuous, comical, ingratiating, delightful, and—at times—infuriating versions of themselves. It is hard to believe, but true, that the babies we hold in our hands at birth may someday be larger and stronger, more talented, and more insightful than we are.

Portraying the Fascination of Children: Personal and Scientific

My goal in writing this book has been to capture the wonder of child development while portraying the field of development as the rigorous science it is. My approach is designed to help motivate students by showing them the joy of observing children. How can one hope to convey a true sense of development if one is blind to its marvels?

Childhood: Voyages in Development evolved from my scientific interest and research in human growth and development and also from my experiences with my own developing family. While my intention is to keep the tone of this text engaging and accessible, this book is rigorous in its reporting of research methods and science. On the other hand, the book is also "hands on"; it contains many applications, which range from preventing infant malnutrition and understanding what it is important to know about immunizations to helping children overcome enuresis and handling bullying in school.

Key Features

The sixth edition of *Childhood: Voyages in Development* contains the following key features:

- A thorough and rigorous update.
- **Concept Reviews:** visual presentations of complex developmental concepts.
- **A Closer Look—Diversity:** interesting and timely topics that show how culture—especially diverse cultural backgrounds—influences the many aspects of child development.

- **A Closer Look—Research:** features that offer expanded coverage of important research studies and also present research issues of great timeliness and interest.
- **A Closer Look—Real Life:** applications that allow readers to "take this book home with them" to apply what they are learning with children and adults in their own lives.

A Thorough Update

This is an exciting time to be studying child development. Every day, new research and new insights help us to better understand the mysteries and marvels of many aspects of development. Several hundred new citations refer the reader to research studies and broader documents, such as the American Academy of Pediatrics' latest recommendations on preventing sudden infant death syndrome (SIDS), the latest information on the use of C-sections, the federal government's most recent recommendations on childhood nutrition, and the most recent "Recommended Immunization Schedule for Persons Aged 0–6."

Chapter Previews

The sixth edition contains chapter preview sections that include *Major Topics*, *Features*, and *Truth or Fiction?* items. These previews help shape students' expectations and enhance the effectiveness of their learning by helping them create mental templates, or "advance organizers," into which they categorize the subject matter.

Chapter-by-Chapter Updates

Every chapter has undergone updating in terms of the coverage of topics and pedagogy. Following is a sampling of what is new:

What's New

Chapter 1	• Challenge to traditional views of "feminine" and "masculine" patterns of behavior, and what it means for behavior to be "gender-appropriate" • Revised discussion of safeguards for children in terms of education, sexual exploitation, and labor • Updated discussion of the psychoanalytic perspective on development • Discussion of the research finding that a majority of Americans believe that it is sometimes necessary to discipline children with a "good, hard spanking"
Chapter 2	• Updated discussion of the role of genetics (nature) in personal and social development • Updated discussions of chromosomal and genetic abnormalities and their effects • Updated discussion of prenatal testing for chromosomal and genetic problems • Updated discussion of epigenetics • Updated discussion of twin studies • Updated coverage of sex selection of fetuses in China

What's New

Chapter 3	• Revised discussion of the role of the nervous system in prenatal development • Updated discussion of the survival rate of preterm infants • Update on the use of Truvada to prevent HIV infection • Update on the (lack of) safety in maternal use of alcohol during pregnancy • Revision of effects of paternal smoking on prenatal development
Chapter 4	• Complete update of global infant and maternal mortality, as published by Save the Children • Update on the prevalence of use of C-sections • Revised section on methods of childbirth • Updated presentation of categories of postpartum mood problems, according to the fifth edition of the DSM of the American Psychiatric Association (DSM-5)
Chapter 5	• Update on the benefits and risks of breastfeeding versus bottle feeding • New coverage of wet nurses • Revised coverage of caregiver promotion of practice in development of infant locomotion • New coverage on preferential treatment of attractive infants
Chapter 6	• Updated coverage of infant-directed speech • New coverage of the emergentist theory of language development
Chapter 7	• New coverage of the "intergenerational transmission of attachment" • Revised coverage of the ethological view of attachment • Revised coverage of the effects of social deprivation on child development • Revised discussion of child abuse and neglect • Revised coverage of reasons that child abuse goes unreported • Revised coverage of sexual abuse of children • Updates on autism spectrum disorders, including problems with lack of pruning of unused synapses
Chapter 8	• Revised and updated coverage of handedness • Revised coverage of minor illness in children • Updated coverage of recommended immunizations
Chapter 9	• Revised and updated coverage of imaginary friends (virtual characters) • Updated coverage of the effects of educational television
Chapter 10	• Updated coverage of children's play • Updated coverage of prosocial behavior • Updated coverage of the effects of violent video games
Chapter 11	• Updated coverage of overweight and obesity in children: causes, effects, and weight control • Updated coverage of government guidelines for childhood nutrition: "Choose My Plate" • Updated coverage of causes and treatment of ADHD

What's New

Chapter 12	• Updated coverage of ways of stimulating children's memory • Updated coverage of children's metamemory • Updated coverage of the relationships between academic ability and creativity
Chapter 13	• Update on children's perspective-taking and the relation to social skills • Update on authoritative parenting and children's self-esteem • Update on the genetic component of self-esteem • Update on factors in children's popularity among peers • Update on the origins and treatment of conduct disorders • Update on the treatment of school phobia or school refusal

What Carries Through from Edition to Edition

The sixth edition of *Childhood: Voyages in Development* continues to present cutting-edge topic coverage, emphasizing the latest findings and research in key areas. The text is organized chronologically. It begins with introductory theoretical material. It then traces the physical, cognitive, and social and emotional sequences that characterize development from infancy through early and middle childhood.

Concept Reviews

Concept Reviews are more than simple summaries. They take complex developmental concepts, such as theories of intelligence, and present them in dynamic layouts that readily communicate the key concepts and the relationships among concepts. Many of them include photographs and figures as well as text. Here is a sampling of the Concept Reviews found in *Childhood: Voyages in Development:*

- Concept Review 1.3: "Perspectives on Child Development"
- Concept Review 6.1: "The Six Substages of the Sensorimotor Stage, According to Piaget"

"A Closer Look—Diversity" Features

These features address the most challenging issues related to the way children are influenced by ethnic background, gender roles, socioeconomic status, and age in areas ranging from intellectual development to ethnic and racial identity. In many cases, cultural and ethnic factors affect the very survival of the child. This coverage helps students understand why parents of different backgrounds and genders rear their children in certain ways, why children from various backgrounds behave and think in different ways, and how the study of child development is enriched by addressing those differences. Here are some examples of such topics:

- Chapter 2: "LGBT Family Building"
- Chapter 3: "The Effects of Parents' Age on Children—Do Men Really Have All the Time in the World?"
- Chapter 4: "Maternal and Infant Mortality Around the World" (the latest information from Save the Children)

"A Closer Look—Research" Features

These research-focused features expand the book's treatment of the ways in which researchers carry out their work. Examples of topics include:

- Chapter 1: "Operant Conditioning of Vocalizations in Infants"
- Chapter 4: "Studying Visual Acuity in Neonates—How Well Can They See?"
- Chapter 5: "Strategies for Studying the Development of Shape Constancy"
- Chapter 6: "On Mirror Neurons and Really Early Childhood Imitation"

"A Closer Look—Real Life" Features

These features enable readers to "take the book home with them"—that is, to apply what they are learning to children and adults in their own lives. Examples of topics include:

- Chapter 3: "Selecting an Obstetrician"
- Chapter 8: "Ten Things You Need to Know About Childhood Immunizations"
- Chapter 9: "Helping Children Use Television Wisely" (including teaching children not to imitate the violence they observe in the media)

An Enhanced Pedagogical Package: PQ4R

PQ4R discourages students from believing that they are sponges who will automatically soak up the subject matter in the same way that sponges soak up water. The PQ4R method stimulates students to *actively* engage the subject matter. Students are encouraged to become *proactive* rather than *reactive*.

PQ4R is the acronym for *Preview, Question, Read, Reflect, Relate*, and *Review*. PQ4R is more than the standard built-in study guide. It goes well beyond the few pages of questions and exercises that are found at the ends of the chapters of many textbooks. It flows throughout every chapter. It begins and ends every chapter, and it accompanies the student page by page.

Preview

The first feature of the PQ4R method is Preview. Revised chapter previews include *Major Topics, Features,* and *Truth or Fiction?* items to help shape students' expectations. The previews enable students to create mental templates, or "advance organizers," into which they categorize the subject matter. The *Truth or Fiction?* items stimulate students to examine their own assumptions and prepare to delve into the subject matter by challenging folklore and common sense (which is often common *non*sense). *Truth or Fiction Revisited* features throughout the chapter inform students whether they were correct in their assumptions. The *Major Topics* list outlines the material in the chapter, creating mental categories that guide students' reading.

Following is a sample of challenging *Truth or Fiction?* items from various chapters:

T | F You can carry the genes for a deadly illness and not become sick yourself.

T | F More children die from sudden infant death syndrome (SIDS) than from cancer, heart disease, pneumonia, child abuse, HIV/AIDS, cystic fibrosis, and muscular dystrophy combined.

T | F Infants need to have experience crawling before they develop fear of heights.

T | F It is dangerous to awaken a sleepwalker.

T | F Three-year-olds usually say "Daddy goed away" instead of "Daddy went away" because they *do* understand rules of grammar.

T | F Children who watch 2–4 hours of television a day will see 8,000 murders and another 100,000 acts of violence by the time they have finished elementary school.

Question

Asking questions about the subject matter, before reading it in detail, is another feature of the PQ4R method. Reading these questions gives students goals; they attend class or read the text *in order to answer the questions*. Headings throughout the chapters are written as questions to help students use the PQ4R method most effectively. When students come to such a question, they can read the following material in order to answer it.

Read

The first R in the PQ4R method stands for Read. Although students will have to read for themselves, they are not alone. The text helps by providing:

- A *Major Topics* list that helps students organize the material in each chapter
- *Truth or Fiction?* items that stimulate students by challenging common knowledge and folklore
- Presentation of the subject matter in clear, stimulating prose
- A running glossary that defines key terms in the margin of the text, near where the terms first appear in the text
- Development of concepts in an orderly fashion so that new concepts build on previously presented concepts

I have chosen a writing style that is "personal." It speaks directly to the student and employs humor and personal anecdotes designed to motivate and stimulate students.

Reflect and Relate

Psychologists have shown that students better understand and remember subject matter when they relate it to their own lives. The "Reflect and Relate" (the second and third R in the PQ4R method) items promote that process of learning. Reflect items are also found in each Closer Look feature, guiding students to relate the content of the Closer Look feature to their own lives, and thereby aiding understanding and reinforcing remembering.

Review

The fourth R in PQ4R stands for Review. Regular reviews of the subject matter help students learn. Therefore, reviews follow all major sections in the text. These reviews contain fill-in-the-blank questions and "Reflect and Relate" items. Fill-in-the-blank exercises ask students to participate actively in the review process, not simply recognize correct answers as with multiple-choice questions. The chapter summaries provide end-of-chapter reviews in question-and-answer format, again prompting active learning.

In sum, we believe that our integrated pedagogical system gives students all the tools they need to comprehend the material and study for tests.

MindTap for Childhood: Voyages in Development

MindTap for Childhood: Voyages in Development engages and empowers students to produce their best work—consistently. By seamlessly integrating course material with videos, activities, apps, and much more, MindTap creates a unique learning path that fosters increased comprehension and efficiency.

For students:

- MindTap delivers real-world relevance with activities and assignments that help students build critical thinking and analytic skills that will transfer to other courses and to their professional lives.
- MindTap helps students stay organized and efficient with a single destination that reflects what is important to the instructor, along with the tools students need to master the content.
- MindTap empowers and motivates students with information that shows where they stand at all times—both individually and compared to the highest performers in class.

Additionally, MindTap allows instructors to:

- Control what content students see and when they see it with a learning path that can be used as-is or matched to their syllabus exactly.
- Create a unique learning path of relevant readings and multimedia and activities that move students up the learning taxonomy from basic knowledge and comprehension to analysis, application, and critical thinking.
- Integrate their own content into the MindTap Reader using their own documents or pulling from sources like RSS feeds, YouTube videos, websites, Google Docs, and more.
- Use powerful analytics and reports that provide a snapshot of class progress, time in course, engagement, and completion.

In addition to the benefits of the platform, MindTap for Childhood: Voyages in Development includes:

- Investigate Development, a case-based simulation that enables students to observe, evaluate, and make decisions about human development and shows the implications of research on a personal level. Students interact with simulated case studies of milestones in a person's development, observing and analyzing audiovisual cues, consulting research, and making decisions. Instead of rote memorization of isolated concepts, Investigate Development compels students to think critically about research and brings human development to life.
- Formative assessments at the conclusion of each chapter.
- Interactive activities drawn from text features that foster student participation.
- Illustrative video embedded in the MindTap Reader to highlight key concepts for students.

Supplementary Materials

Online Instructor's Resource Manual

The *Instructor's Resource Manual* contains resources designed to streamline and maximize the effectiveness of course preparation. The contents include chapter overviews

and outlines, learning objectives, critical thinking discussion questions, instructional goals, lecture expanders, video recommendations, and handouts.

Cengage Learning Testing Powered by Cognero

Cognero is a flexible, online system that allows you to author, edit, and manage test bank content as well as create multiple test versions in an instant. You can deliver tests from your school's learning management system, your classroom, or wherever you want. The test bank contains multiple-choice, completion, true/false, and essay questions for each chapter.

Online PowerPoint

These vibrant Microsoft® PowerPoint® lecture slides for each chapter assist you with your lecture by providing concept coverage using content directly from the textbook.

Acknowledgments

Reviewers

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With a group like this looking over your shoulder, it's difficult to make mistakes. But if any remain, I am solely responsible.

The book you hold in your hands would not be what it is without the insights and suggestions of my academic colleagues. It also owes much to the fine editorial and production team at Cengage and assembled by Cengage: Melissa Gena, Product Manager; Christy Frame, Content Project Manager; Nick Barrows, IP Project

Manager; Charles Nichols, Content Digitization Project Manager; Sean Cronin and Adrienne McCrory in content development; James Finlay in marketing; and Vernon Boes, Senior Art Director.

Finally, I acknowledge the loving assistance of my family. My wife, Lois Fichner-Rathus, continues in her joint roles as supporter and critical reviewer. As shown in experiments with the visual cliff, infants will not usually go off the deep end. As a textbook author herself, and as an academic, Lois often prevents me from going off the deep end. My children I thank as the sources of stories—and stories and more stories. But mostly I thank them for being what they are: wellsprings of delight and fancy, occasional annoyances, and perpetual goads.

1

History, Theories, and Methods

Hero Images/Fancy/Corbis

Major Topics

1.1 What Is Child Development? Coming to Terms with Terms

1.2 Theories of Child Development

1.3 Controversies in Child Development

1.4 How Do We Study Child Development?

1.5 Ethical Considerations

Features

Concept Review 1.1: Comparison of Freud's and Erikson's Stages of Development

A CLOSER LOOK—**Research:** The Bell-and-Pad Method for Treating Bedwetting

A CLOSER LOOK—**Research:** Operant Conditioning of Vocalizations in Infants

Concept Review 1.2: Jean Piaget's Stages of Cognitive Development

Concept Review 1.3: Perspectives on Child Development

A CLOSER LOOK—**Research:** Surveying High School Seniors' Attitudes Toward Living Together Before Getting Married

Concept Review 1.4: Comparison of Cross-Sectional, Longitudinal, and Cross-Sequential Research

A CLOSER LOOK—**Research:** The Conditioning of "Little Albert": A Case Study in Ethics

TruthorFiction?

T | F During the Middle Ages in Europe, children were often treated as miniature adults. **p. 6**

T | F Children come into the world as "blank tablets"—without inborn differences in intelligence and abilities. **p. 6**

T | F Nail biting and smoking cigarettes are signs of conflict experienced during early childhood. **p. 9**

T | F Children should not be punished. **p. 16**

T | F Research with monkeys has helped psychologists understand the formation of attachment in humans. **p. 38**

T | F To learn how people develop over a lifetime, researchers have tracked some individuals for more than 50 years. **p. 39**

This book has a story to tell. An important story. A remarkable story. It is your story. It is about the remarkable journey you have already taken through childhood. It is about the unfolding of your life today. Billions have made this journey before. You have much in common with them. Yet you are unique, and things will happen to you, and because of you, that have never happened before.

Development of children is what this book is about. In a very real sense, we cannot hope to understand ourselves as adults—we cannot catch a glimpse of the journeys we have taken to arrive at this point in our lives—without understanding children.

In this chapter, we explore some of the reasons for studying development. We take a brief tour of the history of child development. It may surprise you that until relatively recent times, people were not particularly sensitive to the ways in which children differ from adults. Next, we examine some controversies in child development, such as whether there are distinct stages of development. We see how theories help illuminate our observations and how theories help point the way toward new observations. Then

PhotoDisc/First Light

we consider methods for the study of child development. Scientists have devised sophisticated methods for studying children, and the field of ethics helps us determine what types of research are deemed proper and what types are deemed improper.

1.1 What is Child Development? Coming to Terms With Terms

Photodisc/First Light

Motor Development This infant has just mastered the ability to pull herself up to a standing position. Soon she will be able to stand alone, and then she will begin to walk.

You have heard the word *child* all your life, so why bother to define it? We do so because words in common usage are frequently used inexactly. A **child** is a person experiencing the period of development from *infancy* to *puberty*—two other familiar words that are frequently used inexactly. The term **infancy** derives from Latin roots meaning "not speaking," and infancy is usually defined as the first 2 years of life, or the period of life before the development of *complex* speech. We stress the word *complex* because many children have a large vocabulary and use simple sentences before their second birthday.

Researchers commonly speak of two other periods of development that lie between infancy and adolescence: early childhood and middle childhood. Early childhood encompasses the ages from 2 to 5 years. Middle childhood generally is defined as the years from 6 to 12. In Western society, the beginning of this period usually is marked by the child's entry into first grade. To study development, we must also look further back to the origin of sperm and ova (egg cells), the process of conception, and the prenatal period. Yet we must also describe the mechanisms of heredity that give rise to traits in humans and other animals.

Development is the orderly appearance, over time, of physical structures, psychological traits, behaviors, and ways of adapting to the demands of life. The changes brought on by development are both *qualitative* and *quantitative*. Qualitative changes are changes in type or kind. Consider motor development. As we develop, we gain the abilities to lift our heads, sit up, crawl, stand, and walk. These changes are qualitative. However, within each of these qualitative changes are quantitative developments, or changes in *amount*. After babies begin to lift their heads, they lift them higher and higher. Soon after children walk, they begin to run. Then they gain the capacity to run faster.

Development occurs across many dimensions—biological, cognitive, social, emotional, and behavioral. Development is spurred by internal factors, such as genetics, and it is shaped by external factors, such as nutrition and culture.

The terms *growth* and *development* are not synonymous, although many people use them interchangeably. **Growth** is generally used to refer to changes in size or quantity, whereas development also refers to changes in quality. During the early days following conception, the fertilized egg cell develops rapidly. It divides repeatedly, and cells begin to take on specialized forms. However, it does not "grow" in that there is no gain in mass. Why? It has not yet become implanted in the uterus and is therefore without any external source of nourishment. Language development is the process by which the child's use of language becomes progressively more sophisticated and complex. Vocabulary growth, by contrast, consists of the accumulation of new words and their meanings.

Child development, then, is a field of study that tries to understand the processes that govern the appearance and growth of children's biological structures, psychological traits, behavior, understanding, and ways of adapting to the demands of life.

Professionals from many fields are interested in child development. They include psychologists, educators, anthropologists, sociologists, nurses, and medical researchers. Each brings his or her own brand of expertise to the quest for knowledge.

child A person undergoing the period of development from infancy through puberty.

infancy The period of very early childhood, characterized by lack of complex speech; the first 2 years after birth.

development The processes by which organisms unfold features and traits, grow, and become more complex and specialized in structure and function.

growth The processes by which organisms increase in size, weight, strength, and other traits as they develop.

Intellectual cross-fertilization enhances the skills of researchers in the field and enriches the lives of children.

Why Do Researchers Study Child Development?

An important motive for studying child development is curiosity—the desire to learn about children. Curiosity may be driven by the desire to answer questions about development that remain unresolved. It may also be driven by the desire to have fun. (Yes, children and the study of children can be fun.) There are other motives as well:

To Gain Insight into the Nature of Human Nature

For centuries, philosophers, scientists, and educators have argued over whether children are aggressive or loving, whether children are conscious and self-aware, whether they have a natural curiosity that demands to unravel the mysteries of the universe, or whether they merely react mechanically to environmental stimulation. The quest for answers has an impact on the lives of children, parents, educators, and others who interact with children.

To Gain Insight into the Origins of Adult Behavior

How do we explain the origins of empathy in adults? Of antisocial behavior? How do we explain the development of so-called "feminine" and "masculine" patterns of behavior? (If these patterns of behavior actually exist, do they represent the natural unfolding of genetic imperatives, societal expectations, or both?) And how do we explain the origins of special talents in writing, music, athletics, and math?

To Gain Insight into the Origins of Sex Differences and Gender Roles, and into the Effects of Culture on Development

How do gender roles—that is, culturally induced expectations for stereotypical feminine and masculine behavior—develop? Are there sex or gender differences in cognition and behavior? If so, how do they develop?

To Gain Insight into the Origins, Prevention, and Treatment of Developmental Problems

Fetal alcohol syndrome, PKU (see Chapter 2), SIDS (see Chapter 5), Down syndrome, autism, hyperactivity, dyslexia, child abuse—these are but a few of the buzzwords and terms that strike fear into parents and parents-to-be. A major focus in child development research is the search for the causes of such problems so that they can be prevented or treated.

To Optimize Conditions of Development

Most parents want to provide the best in nutrition and medical care for their children so that they will develop strong and healthy bodies. Parents want their infants to feel secure with them. They want to ensure that major transitions, such as the transition from the home to the school, will be as stress-free as possible. Researchers therefore strive to learn about issues such as:

- The effects of various foods and chemicals on the development of the embryo
- The effects of parent–infant interaction immediately following birth on bonds of attachment with children
- The effects of bottle feeding versus breastfeeding on mother–infant attachment and the baby's health

- The effects of day-care programs on parent–child bonds of attachment and on children's social and intellectual development
- The effects of various patterns of child rearing on the development of independence, competence, and social adjustment

What Views of Children Do We Find Throughout History?

In ancient times and in the Middle Ages, children often were viewed as innately evil, and discipline was harsh. Legally, medieval children in Europe were treated as property and servants. They could be sent to the monastery, married without consultation, or convicted of crimes. Children were nurtured until they were 7 years old, which was considered the "age of reason." Then they were expected to work alongside adults in the home and in the field. They ate, drank, and dressed as miniature adults.

TRUTH OR FICTION REVISITED: It is true that children were treated as miniature adults throughout most of the Middle Ages. (For example, for much of the Middle Ages, artists depicted children as small adults.) However, this meant only that more was expected of them, not that they were given more privileges.

The transition to the study of development in modern times is marked by the thinking of philosophers such as John Locke and Jean-Jacques Rousseau. The Englishman John Locke (1632–1704) believed that the child came into the world as a *tabula rasa*—a "blank tablet" or clean slate—that was written on by experience. Locke did not believe that inborn predispositions toward good or evil played an important role in the conduct of the child. Instead, he focused on the role of the environment or of experience. Locke believed that social approval and disapproval are powerful shapers of behavior. Jean-Jacques Rousseau (1712–1778), a Swiss–French philosopher, reversed Locke's stance. Rousseau argued that children are inherently good and that, if allowed to express their natural impulses, they will develop into generous and moral individuals.

Erich Lessing/Art Resource, NY

A View of Children as Perceived in the 1600s Centuries ago, children were viewed as miniature adults. In this 17th-century painting, notice how the body proportions of the young princess (in the middle) are similar to those of her adult attendants.

TRUTH OR FICTION REVISITED: John Locke believed that children come into the world as "blank tablets"—without inborn differences in intelligence and talents. However, as we will see, there is research evidence that inborn factors—one's heredity—play a role in the development of intelligence and personality traits.

During the Industrial Revolution, there was greater awareness of childhood as a special time of life. Still, children often labored in factories from dawn to dusk through the early years of the 20th century.

In the 20th century in the United States and many other developed nations, laws were passed to protect children from strenuous labor, to require that they attend

school until a certain age, and to prevent them from getting married or being sexually exploited. But these safeguards are by no means universal. Nevertheless, in the United States, where children were once considered the property of parents, who could do with them as they wished, laws now protect children from the abuse and neglect of parents and other caretakers. Juvenile courts see that children who break the law receive fair and appropriate treatment in the criminal justice system.

Lewis Wickes Hine/Bettmann/Corbis

A Young Child Laborer Children often worked long days in factories up through the early years of the 20th century. A number of cultures in the world today still use child labor.

Pioneers in the Study of Child Development

Various thoughts about child development coalesced into a field of scientific study in the 19th and early 20th centuries. Many individuals, including Charles Darwin, G. Stanley Hall, and Alfred Binet, contributed to the emerging field.

The Englishman Charles Darwin (1809–1882) is best known as the originator of the theory of evolution. But he also was one of the first observers to keep a *baby biography,* in which he described his infant son's behaviors in great detail. The American G. Stanley Hall (1844–1924) is credited with founding child development as an academic discipline. He adapted the questionnaire method for use with large groups of children so that he could study the "contents of children's minds." The Frenchman Alfred Binet (1857–1911), along with Theodore Simon (1872–1961), developed the first standardized intelligence test near the turn of the 20th century. The purpose of Binet's test was to identify public school children who were at risk of falling behind their peers in academic achievement.

By the beginning of the 20th century, child development had emerged as a scientific field of study. Within a short time, major theoretical views of the developing child had begun to emerge, proposed by such scientists as Arnold Gesell, Sigmund Freud, John B. Watson, and Jean Piaget. We next describe their theories of child development, as well as those of other theorists.

Section Review

1. A child is a person experiencing the period of development from infancy to _____.
2. _____ is the orderly appearance, over time, of structures, traits, and behaviors.
3. The word *growth* is generally used to refer to changes in size or quantity, whereas the term _____ also refers to changes in quality.

Reflect & Relate: Do you believe that children are "wild"? That children must be "tamed"? Do you see dangers (to children) in answering yes to either question? Explain.

1.2 Theories of Child Development

> "Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in, and I'll guarantee to train them to become any type of specialist I might suggest—doctor, lawyer, merchant, chief, and, yes, even beggar and thief, regardless of their talents, penchants, tendencies, abilities, vocations, and the race of their ancestors."
>
> Watson, 1924, p. 82

behaviorism John B. Watson's view that a science or theory of development must study observable behavior only and investigate relationships between stimuli and responses.

John B. Watson, the founder of American **behaviorism**, viewed development in terms of learning. He generally agreed with Locke's view that children's ideas,

preferences, and skills are shaped by experience. There continues to be a long-standing nature–nurture debate in the study of children. In his theoretical approach to understanding children, Watson came down on the side of nurture—the importance of the physical and social environments—found, for example, in parental training and approval. Watson's view turned upside down the history of approaches to understanding children. Nature, or the inherited, genetic characteristics of the child, had long been the more popular explanation of how children develop into who they are.

Four years after Watson sounded his call for the behavioral view, Arnold Gesell expressed the opposing idea that biological maturation was the main principle of development: "All things considered, the inevitability and surety of maturation are the most impressive characteristics of early development. It is the hereditary ballast which conserves and stabilizes growth of each individual infant" (Gesell, 1928, p. 378). Watson was talking about the behavior patterns that children develop, whereas Gesell was focusing largely on the physical aspects of growth and development. Still, the behavioral and maturational perspectives lie at opposite ends of the continuum of theories of development. Many observers fall into the trap of overemphasizing the importance of either nature or nurture; thus they risk of overlooking the ways in which nature and nurture interact. Just as a child's environments and experiences influence the development of his or her biological endowment, children often place themselves in environments that are harmonious with their personal characteristics. Children, for example, are influenced by teachers and by other students. Nevertheless, because of the traits they bring to school with them, some children may prefer to socialize with other children while other children may prefer to socialize with teachers. Still other children may prefer solitude.

What Are Theories of Child Development?

Child development is a scientific enterprise. Like other scientists, those who study development seek to describe, explain, predict, and influence the events they observe. When possible, descriptive terms and concepts are interwoven into **theories**. Theories are based on assumptions about behavior, such as Watson's assumption that training outweighs talents and abilities, or Gesell's assumption that the unfolding of maturational tendencies holds sway.

Theories enable us to derive explanations and predictions. For instance, a theory concerning the development of gender roles should allow us to predict how—and whether—children will acquire stereotypical feminine or masculine gender-typed behavior patterns. A broad theory of the development of gender roles might apply to children from different cultural and racial backgrounds and, perhaps, to children with gay male and lesbian sexual orientations as well as to children with a heterosexual orientation. If observations cannot be explained by or predicted from a theory, we may need to revise or replace the theory.

Theories also enable researchers to influence events, as in working better with parents, teachers, nurses, and children themselves to promote the welfare of children. Psychologists may summarize and interpret theory and research on the effects of day care to help day-care workers provide an optimal child-care environment. Teachers may use learning theory to help children learn to read and write. Let us consider various theoretical perspectives on child development.

What Is the Psychoanalytic Perspective on Child Development?

theory A formulation of relationships underlying observed events. A theory involves assumptions and logically derived explanations and predictions.

A number of theories fall within the psychoanalytic perspective. Each one owes its origin to Sigmund Freud and views children—and adults—as caught in conflict (Hergenhahn & Henley, 2014). Early in development, the conflict is between the child and the world outside. The expression of basic drives, such as sex and aggression, conflicts with parental expectations, social rules, moral codes, even laws.

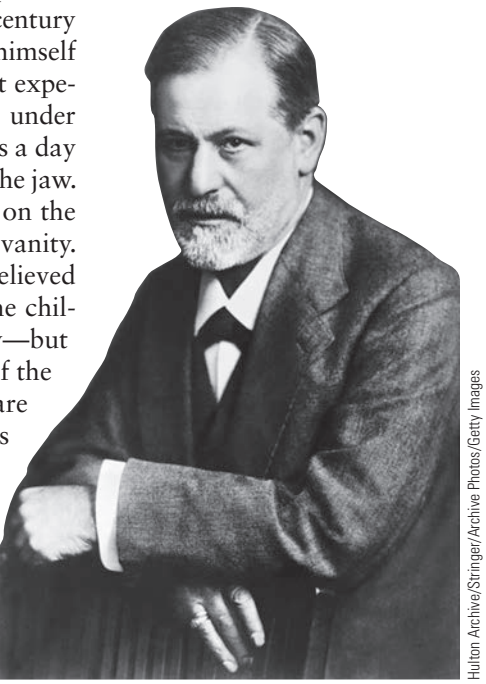
However, the external limits—parental demands and social rules—are *internalized;* that is, they are brought inside. Once this happens, the conflict takes place between opposing *inner* forces. The child's observable behavior, thoughts, and feelings reflect the outcomes of these hidden battles.

In this section, we explore Freud's theory of **psychosexual development** and Erik Erikson's theory of psychosocial development. Each is a **stage theory** that sees children as developing through distinct periods of life. Each suggests that the child's experiences during early stages affect the child's emotional and social life then and later on.

Sigmund Freud's Theory of Psychosexual Development

Sigmund Freud (1856–1939) was a mass of contradictions. He has been both praised as the greatest thinker—or at least the greatest psychologist—of the 20th century and criticized as overrated. He preached liberal views on sexuality but was himself a model of sexual restraint. He invented a popular form of psychotherapy but experienced lifelong emotional problems, including migraine headaches, fainting under stress, hatred of the telephone, and an addiction to cigars. He smoked 20 cigars a day and could not or would not break the habit, even after he developed cancer of the jaw.

Freud focused on the emotional and social development of children and on the origins of psychological traits such as dependence, obsessive neatness, and vanity. Let us dive into Freud's theory. *Diving* is a good metaphor because Freud believed that most of the human mind lies beneath consciousness, like an iceberg. The children you observe do and say many things—cry, crawl, run, talk, build, play—but all this is the tip of the iceberg. And the tip of an iceberg is the smallest part of the iceberg. Freud theorized that people, because of their childhood experiences, are only vaguely aware of the ideas and impulses that occupy the greater depths of their minds.



Hulton Archive/Stringer/Archive Photos/Getty Images

Sigmund Freud Sigmund Freud is the originator of psychoanalytic theory. He proposed five stages of psychosexual development and emphasized the importance of biological factors in the development of personality.

Freud theorized three parts of the personality: the *id*, *ego*, and *superego*. The id is present at birth and is unconscious. It represents biological drives and demands instant gratification, as suggested by a baby's wailing. The ego, or the conscious sense of self, begins to develop when children learn to obtain gratification for themselves, without screaming or crying. The ego curbs the appetites of the id and makes plans that are in keeping with social conventions so that a person can find gratification yet avoid social disapproval. The superego develops throughout infancy and early childhood and brings inward the norms and morals of the child's caregivers and other members of the community. If the child misbehaves, the superego will flood him or her with guilt and shame.

According to Freud, childhood has five stages of psychosexual development: *oral, anal, phallic, latency,* and *genital*. If a child receives too little or too much gratification during a stage, the child can become *fixated* in that stage. For example, in the first stage, if the child is weaned early or breastfed too long, the child may become fixated on *oral* activities such as nail biting or smoking, or even show a "sharp tongue" or "biting wit."

TRUTH OR FICTION REVISITED: Sigmund Freud hypothesized that nail biting and smoking cigarettes are signs of conflict experienced during early childhood—in fact, during the so-called oral stage of development. However, there is actually no research evidence that nail biting and smoking cigarettes are signs of conflict experienced during early childhood, so we must—from a scientific perspective—consider Freud's belief to be fictional.

psychosexual development Freud's view that as children develop, they find sexual gratification through stimulating different parts of their bodies.

stage theory A theory of development characterized by hypothesizing the existence of distinct periods of life. Stages follow one another in an orderly sequence.

In the second stage, the *anal stage,* gratification is obtained through control and elimination of waste products. Excessively strict or permissive toilet training can lead to the development of so-called anal-retentive traits, such as perfectionism and

neatness, or anal-expulsive traits, such as sloppiness and carelessness. In the third stage, the *phallic stage*, parent–child conflict may develop over masturbation, which many parents treat with punishment and threats. It is normal for children to develop strong sexual attachments to the parent of the other sex during the phallic stage and to begin to view the parent of the same sex as a rival.

Freud believed that by age 5 or 6, children enter a *latency stage* during which sexual feelings remain unconscious; children turn to schoolwork and typically prefer playmates of their own sex. The final stage of psychosexual development, the *genital stage*, begins with the biological changes that usher in adolescence. Adolescents

Concept Review 1.1

Comparison of Freud's and Erikson's Stages of Development

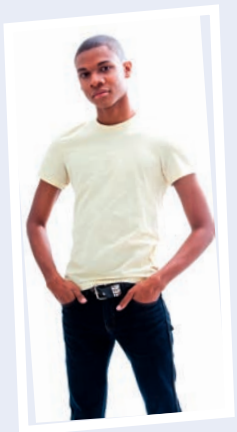
Age	Freud's Stages of Psychosexual Development	Erikson's Stages of Psychosocial Development
Birth to 1 year  Photodisc/First Light	**Oral Stage.** Gratification derives from oral activities such as sucking. Fixation leads to development of oral traits such as dependence, depression, and gullibility.	**Trust versus Mistrust.** The developmental task is to come to trust the key caregivers, primarily the mother, and the environment. It is desirable for the infant to connect the environment with inner feelings of satisfaction and contentment.
About 1 to 3 years	**Anal Stage.** Gratification derives from anal activities involving elimination. Fixation leads to development of anal- retentive traits (e.g., excessive neatness) or anal-expulsive traits (e.g., sloppiness).	**Autonomy versus Shame and Doubt.** The developmental task is to gain the desire to make choices and the self-control to regulate one's behavior so that choices can be actualized.
About 3 to 6 years	**Phallic Stage.** Gratification derives from stimulation of the genital region. Fixation leads to development of phallic traits such as vanity.	**Initiative versus Guilt.** The developmental task is to add initiative—planning and attempting to achieve that which one has chosen. The preschooler is on the move and becomes proactive.
About 6 to 12 years  Brand X Photography/Veer	**Latency Stage.** Sexual impulses are suppressed, allowing the child to focus on development of social and technological skills.	**Industry versus Inferiority.** The developmental task is to become absorbed in the development and implementation of skills, to master the basics of technology, and to become productive.

generally desire sexual gratification through intercourse with a member of the other sex. Freud believed that oral or anal stimulation, masturbation, and male–male or female–female sexual activity are immature forms of sexual conduct that reflect fixations at early stages of development.

Evaluation

Freud's theory has had much appeal and was a major contribution to modern thought on child development. His is a rich theory of development, explaining the childhood

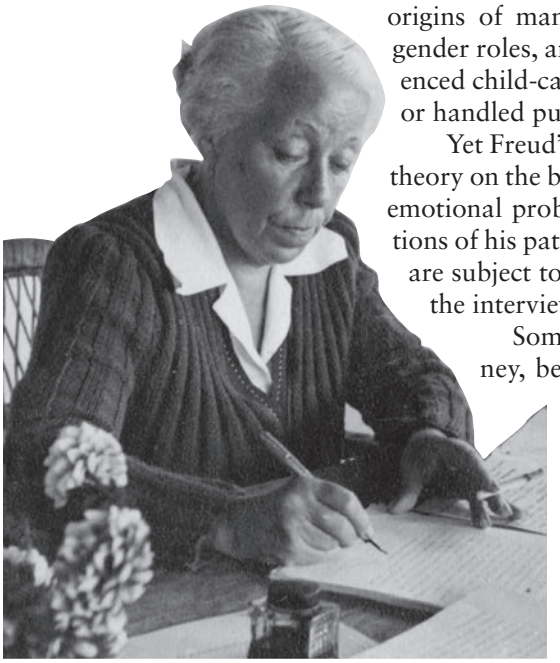
Comparison of Freud's and Erikson's Stages of Development (continued)

Age	Freud's Stages of Psychosexual Development	Erikson's Stages of Psychosocial Development
Adolescence  Paul Hakimata/Alamy	**Genital Stage.** Sexual impulses reappear, with gratification sought through sexual relations with an adult of the other sex.	**Identity versus Role Diffusion.** The developmental task is to associate one's skills and social roles with the development of career goals. More broadly, the development of identity refers to a sense of who one is and what one believes in.
Young adulthood		**Intimacy versus Isolation.** The developmental task is to commit oneself to another person and to engage in a mature sexual love.
Middle adulthood		**Generativity versus Stagnation.** The developmental task is to appreciate the opportunity to "give back." Not only are generative people creative, but they also give encouragement and guidance to the younger generation, which may include their own children.
Late adulthood  Jon Erikson/The Image Works		**Ego Integrity versus Despair.** The developmental task is to achieve wisdom and dignity in the face of declining physical abilities. Ego integrity also means accepting the time and place of one's own life cycle.

origins of many traits and stimulating research on attachment, development of gender roles, and moral development. Freud's views about the anal stage have influenced child-care workers to recommend that toilet training not be started too early or handled punitively.

Yet Freud's work has been heavily criticized. For one thing, Freud developed his theory on the basis of contacts with patients (mostly women) who were experiencing emotional problems (Schultz & Schultz, 2012). He was also dealing with recollections of his patients' pasts, rather than observing children directly. Such recollections are subject to errors in memory—and to the suggestions of the person conducting the interview or the form of therapy.

Some of Freud's own disciples, including Erik Erikson and Karen Horney, believe that Freud placed too much emphasis on basic instincts and unconscious motives. They argue that people are motivated not only by drives such as sex and aggression but also by social relationships and conscious desires to achieve, to have aesthetic experiences, and to help others.



Courtesy of Renate Horney

Karen Horney

Erik Erikson's Theory of Psychosocial Development

Erik Erikson (1902–1994) modified and expanded Freud's theory. Erikson's theory, like Freud's, focuses on the development of the emotional life and psychological traits. But Erikson also focuses on the development of self-identity and argues that social relationships are more important than sexual or aggressive instincts. Therefore, Erikson speaks of **psychosocial development** rather than of *psychosexual development*. Furthermore, it seemed to Erikson that he had developed his own personality through a series of conscious and purposeful acts. Consequently, he places greater emphasis on the ego, or the sense of self.

psychosocial development Erikson's theory, which emphasizes the importance of social relationships and conscious choice throughout the eight stages of development.

life crisis An internal conflict that attends each stage of psychosocial development. Positive resolution of early life crises sets the stage for positive resolution of subsequent life crises.

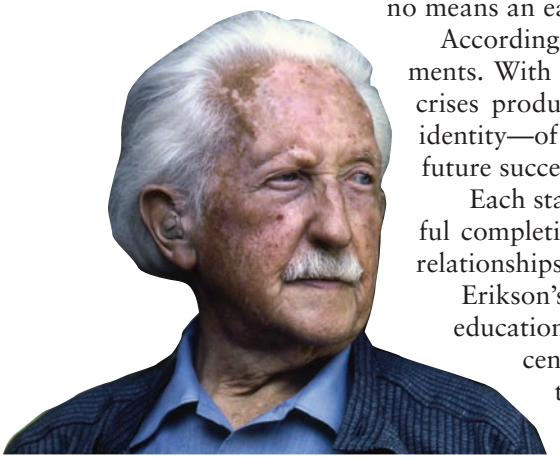
Erikson (1963) extended Freud's five developmental stages to eight to include the changing concerns throughout adulthood. Rather than labeling his stages after parts of the body, Erikson labeled stages after the **life crises** that the child (and then the adult) might encounter during that stage. Erikson's stages are compared with Freud's in Concept Review 1.1 on pages 10-11.

Erikson proposed that social relationships and physical maturation give each stage its character. For example, the parent–child relationship and the infant's utter dependence and helplessness are responsible for the nature of the earliest stages of development. The 6-year-old's capacity to profit from the school setting reflects the cognitive capacities to learn to read and to understand the basics of math—along with the ability to sit still long enough to focus on schoolwork, by no means an easy task for many children, especially boys.

According to Erikson, as with Freud, early experiences affect future developments. With proper parental support early on, most children resolve early life crises productively. Successful resolution of each crisis bolsters their sense of identity—of who they are and what they stand for—and their expectation of future success.

Each stage in Erikson's theory carries a specific developmental task. Successful completion of this task depends heavily on the nature of the child's social relationships at each stage (see Concept Review 1.1).

Erikson's views, like Freud's, have influenced child rearing, early childhood education, and child therapy. For example, Erikson's views about an adolescent **identity crisis** have entered the popular culture and have affected the way many parents and teachers deal with teenagers. Some schools help students master the crisis by offering life-adjustment courses and study units on self-understanding in social studies and literature classes.



Jon Erikson/The Image Works

Erik Erikson

Evaluation

Erikson's views are appealing in that they emphasize the importance of human consciousness and choice while minimizing the role—and the threat—of dark, poorly perceived urges. They are also appealing because they portray us as prosocial and helpful, whereas Freud portrayed us as selfish and needing to be forced into compliance with social rules. There is also some empirical support for the Eriksonian view that positive outcomes of early life crises help put children on the path to positive development (Clark, 2010; Marcia, 2010). For example, infants who come to trust in their parents are more likely to achieve autonomy and ego identity later on.

Picture Partners/Alamy

Erikson saw adolescence as a stage of life during which individuals develop—or fail to develop—a sense of identity.

What Are the Learning Perspectives on Child Development?

In this section, we first discuss two types of learning—classical conditioning and operant conditioning—that have contributed to behaviorism and the behavioral view of development. We will see how the principles of learning have been used in behavior modification to help children overcome behavior disorders or cope with adjustment problems. Then we will consider a more recent theory of learning that deals with children's cognitive processes and their overt behavior—social cognitive theory.

We begin by returning to John B. Watson's theory of behaviorism.

Behaviorism

John B. Watson argued that a scientific approach to development must focus on observable behavior only, and not on thoughts, fantasies, and other mental images.

Classical conditioning is a simple form of learning in which an originally neutral **stimulus** comes to bring forth, or elicit, the response usually brought forth by a second stimulus as a result of being paired repeatedly with the second stimulus. In the bell-and-pad treatment for bedwetting, psychologists repeatedly pair tension in the children's bladders with a stimulus that wakes them up (the bell). The children learn to respond to the bladder tension as if it was a bell—that is, they wake up (see Figure 1.1 ■).

Behaviorists argue that a good deal of emotional learning is acquired through classical conditioning. For example, touching a hot stove is painful, and one or two

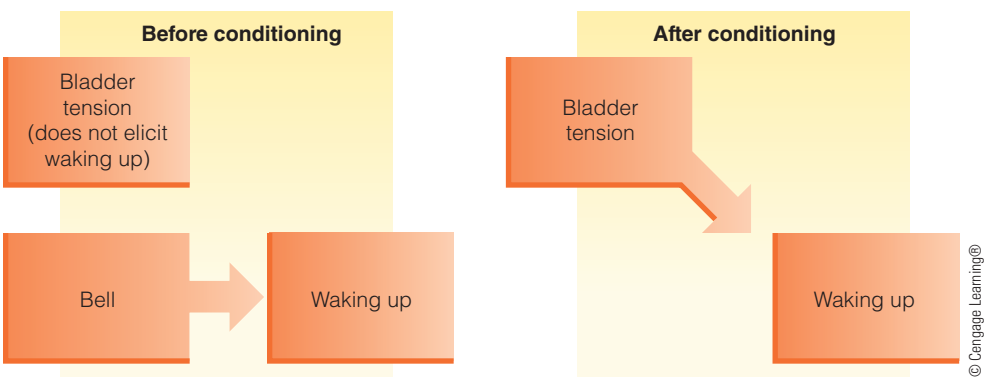


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Figure 1.1 ■ Schematic Representation of Classical Conditioning
Before conditioning, the bell elicits the waking up of the infant. Bladder tension, a neutral stimulus, does not wake the infant. During conditioning, bladder tension always precedes urination, which in turn causes the bell to ring. After conditioning, bladder tension wakes the infant.

identity crisis According to Erikson, an adolescent period of inner conflict during which one examines one's values and makes decisions about one's life roles.

classical conditioning A simple form of learning in which one stimulus comes to bring forth the response usually elicited by a second stimulus by being paired repeatedly with the second stimulus.

A Closer Look Research

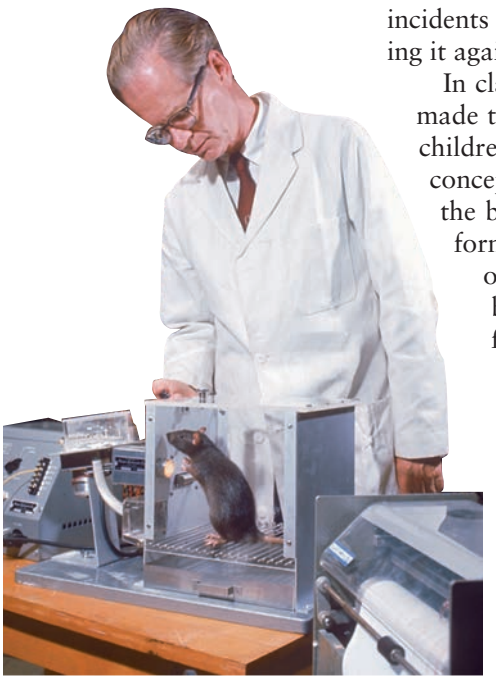
THE BELL-AND-PAD METHOD FOR TREATING BEDWETTING

During the 1930s, psychologists derived an ingenious method for helping 5- and 6-year-old children overcome bedwetting from the behavioral perspective. Most children at this age wake up and go to the bathroom when their bladders are full. But bedwetters sleep through bladder tension and reflexively urinate in bed. The psychologists' objective was to teach sleeping children with full bladders to wake up rather than wet their beds.

The psychologists placed a special pad beneath the sleeping child (Mowrer & Mowrer, 1938). When the pad was wet, an electrical circuit was closed, causing a bell to ring and the sleeping child to waken. After several repetitions, most children learned to wake up before they wet the pad. As behaviorists explain it, repeated association of bedwetting and waking due to the alarm—that is, conditioning—caused the children to wake in response to the urge to urinate.

The so-called bell-and-pad method for treating bedwetting is an exotic example of the application of learning theory in child development. Most applications of learning theory to development are found in everyday events. For example, children are not born knowing what the letters A and B sound like or how to tie their shoes. They learn these things. They are not born knowing how to do gymnastics, nor are they born understanding the meanings of abstract concepts such as big, blue, decency, and justice. All these skills and knowledge are learned.

Reflect Does this application of learning theory to a developmental problem show that we can speak of learning in terms of what a young child does as well as in terms of what a child knows? What do you think? Explain.



Nina Leen/The Life Picture Collection/Getty Images

B. F. Skinner Skinner, a behaviorist, developed principles of operant conditioning and focused on the role of reinforcement of behavior.

incidents may elicit a fear response when a child looks at a stove or considers touching it again.

In classical conditioning, children learn to associate stimuli so that a response made to one is then made in response to the other. But in **operant conditioning**, children learn to do something because of its effects. B. F. Skinner introduced the concept of **reinforcement**. Reinforcers are stimuli that increase the frequency of the behavior they follow. Most children learn to adjust their behavior to conform to social codes and rules in order to earn reinforcers, such as the approval of parents and teachers. Other children, ironically, may learn to misbehave, because misbehavior also draws attention. Any stimulus that increases the frequency of the responses preceding it serves as a reinforcer. Most of the time, food, social approval, and attention serve as reinforcers.

Skinner distinguished between positive and negative reinforcers. **Positive reinforcers** increase the frequency of behaviors when they are *applied*. Food and approval usually serve as positive reinforcers. **Negative reinforcers** increase the frequency of behaviors when they are *removed*. Fear acts as a negative reinforcer in that its removal increases the frequency of the behaviors preceding it. For example, fear of failure is removed when students study for a quiz. Figure 1.2 ■ compares positive and negative reinforcers.

Punishments are aversive events that suppress or *decrease* the frequency of the behavior they follow. (Figure 1.3 ■ compares negative reinforcers with punishments.) Punishments can be physical (such as spanking) or verbal (such as scolding or criticizing) or can consist of the removal of privileges. Surveys show that the great majority of Americans agree with the statement "It is sometimes necessary to discipline a child with a 'good, hard spanking'" (Child Trends Data Bank, 2012). It is clear that punishments can rapidly suppress undesirable behavior and may be warranted in emergencies, such as when a child

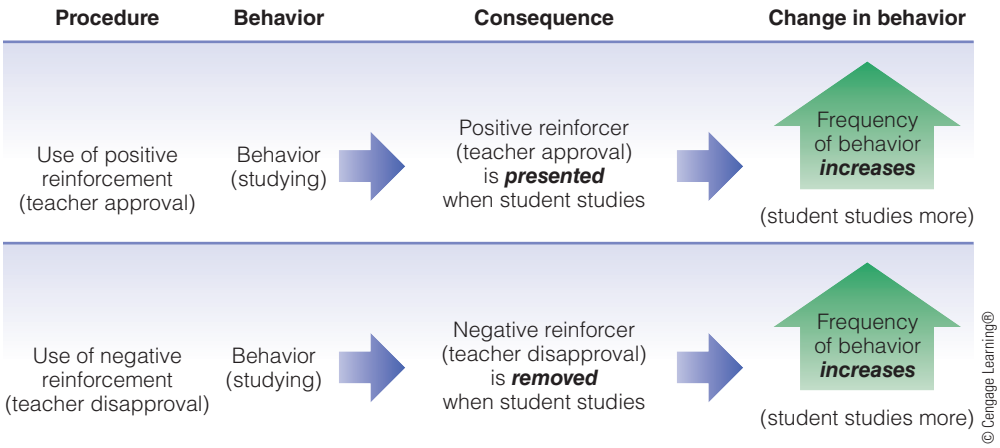


Figure 1.2 ■ Positive versus Negative Reinforcers
All reinforcers *increase* the frequency of behavior. In these examples, teacher *approval* functions as a positive reinforcer when students study harder *because* of it. Teacher *disapproval* functions as a negative reinforcer when its *removal* increases the frequency of studying.

tries to run out into traffic. Yet many learning theorists agree that punishment is usually undesirable in rearing children, for reasons such as the following (Holmes, 2014):

- Punishment does not in itself suggest an alternative, acceptable form of behavior.
- Punishment tends to suppress undesirable behavior only when its delivery is guaranteed. It does not take children long to learn that they can "get away with murder" with one parent or one teacher but not with another.
- Punished children may withdraw from the situation. Severely punished children may run away, cut class, or drop out of school.
- Punishment can create anger and hostility. After being spanked by their parents, children may hit smaller siblings or destroy objects in the home.
- Punishment may generalize too far. The child who is punished severely for bad table manners may stop eating altogether. Such overgeneralization

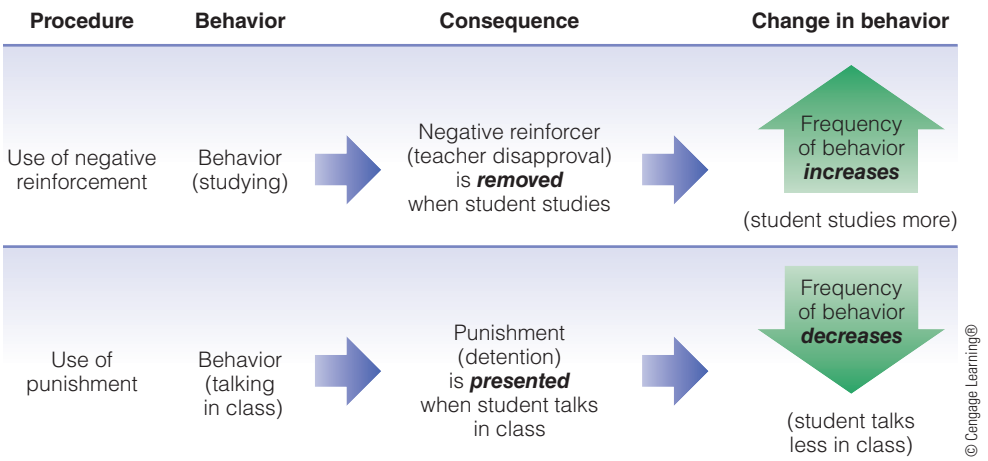


Figure 1.3 ■ Negative Reinforcers versus Punishments
Both negative reinforcers and punishments tend to be aversive stimuli. However, reinforcers increase the frequency of behavior and punishments decrease the frequency of behavior. Negative reinforcers increase the frequency of behavior when they are removed.

stimulus A change in the environment that leads to a change in behavior.

operant conditioning A simple form of learning in which an organism learns to engage in behavior that is reinforced.

reinforcement The process of providing stimuli following a behavior, which has the effect of increasing the frequency of the behavior.

positive reinforcer A reinforcer that, when applied, increases the frequency of a behavior.

negative reinforcer A reinforcer that, when removed, increases the frequency of a behavior.

punishment An unpleasant stimulus that suppresses behavior.

A Closer Look Research

OPERANT CONDITIONING OF VOCALIZATIONS IN INFANTS

A classic study by psychologist Harriet Rheingold and her colleagues (1959) demonstrated how reinforcement and extinction can influence the behavior of infants—in this case, vocalization. A researcher first observed the subjects, 3-month-old infants, for about half an hour to record baseline (pre-experimental) measures of the frequency of their vocalizing. Infants averaged 13 to 15 vocalizations each. During the conditioning phase of the study, the researcher reinforced the vocalizations with social stimuli, such as encouraging sounds, smiles, and gentle touches. There was a significant increase in the frequency of vocalizing throughout this phase. By the end of an hour of conditioning spread over a 2-day period, the average incidence of vocalizations had nearly doubled to 24 to 25 within a half-hour. During the extinction phase, as during the baseline period, the researcher passively observed each infant, no longer reinforcing vocalization. After two half-hour extinction periods, average vocalizing had returned to near baseline, 13 to 16 per half-hour.

Reflect Why is it of interest that the behavior of infants can be influenced by operant conditioning? Can you think of any role this conditioning might play in attachment between parents and infants?

Courtesy of Dr. Arnold Rheingold

is more likely to occur when children do not know why they are being punished.

- Punishment may be imitated as a way of solving problems or coping with stress. Children learn by observing others. For example, children who are physically punished by their parents may act aggressively toward other children (Sim & Ong, 2005) or toward their own children when they become parents (Huesmann et al., 2006).

TRUTH OR FICTION REVISITED: Should children be punished? Part of the answer relies on the nature of the situation. In general, however, most psychologists suggest that it is preferable to reward children for desirable behavior rather than to punish them for unwanted behavior. Sometimes by ignoring misbehavior, we avoid reinforcing children for it.

shaping A procedure for teaching complex behavior patterns by reinforcing small steps toward the target behavior.

We can teach children complex behaviors by **shaping**, or reinforcing small steps toward the behavioral goals. In teaching a 2-year-old child to put on her own coat, it helps to first praise her for trying to stick her arm into a sleeve on a couple occasions, then to praise her for actually getting her arm into the sleeve, and so on.

Research suggests that when teachers praise and attend to appropriate behavior and ignore misbehavior, studying and classroom behavior improve while disruptive and aggressive behaviors decrease (Coffee & Kratochwill, 2013; Marchant & Anderson, 2012). Teachers frequently use **time-out** from positive reinforcement to discourage misbehavior. For example, misbehavior might be punished by having the child remain in the classroom for a few minutes before being allowed to play with other children during recess. In using time-out in the home, parents might restrict children from watching television for a specified amount of time—say, 10 minutes—if they misbehave. It is advisable to warn young children that they will have a time-out if they are misbehaving, and also to remind young children why they have been given a time-out. Otherwise, they may not reliably associate the time-out with misbehavior.

Operant conditioning is used every day in the *socialization* of young children. For example, as we will see in Chapter 10, parents and peers influence children to acquire gender-appropriate behaviors through the elaborate use of rewards and punishments. (Parenthetically, we will see that one can argue about whether a behavior is gender-appropriate, or even whether the concept of gender-appropriateness itself has any validity.) In any event, observations suggest that boys may ignore other boys when they play with dolls and housekeeping toys, but choose to play with other boys when they use transportation toys. Many children are thus encouraged to engage in behavior that is largely considered appropriate for them in their societies, even if the "appropriate" behavior in unenjoyable or unfulfilling to the children themselves.

Social Cognitive Theory

Behaviorists tend to limit their view of learning to the classical and operant conditioning of observable behavior. **Social cognitive theorists**, such as Albert Bandura (1986, 2011, 2012), have shown that much of children's learning also occurs by observing parents, teachers, other children, and characters in the media. Children may need practice to refine their skills, but they can acquire the basic know-how through observation. Children can also let these skills *lie latent*. For example, children (and adults) are not likely to imitate aggressive behavior unless they are provoked and believe that they are more likely to be rewarded than punished for aggressive behavior.

Jon Brenneis/Life Magazine/The Life Images Collection/Getty Images

Albert Bandura Bandura and other social cognitive theorists showed that one way children learn is by observing others. Whereas behaviorists like John Watson and B. F. Skinner portrayed children as reactive to environmental stimuli, social cognitive theorists depict children as active learners who are capable of fashioning new environments.

In the view of behaviorists, learning occurs by mechanical conditioning. There is no reference to thought. In social cognitive theory, cognition plays a central role: Learning alters children's mental representation of the environment and affects their belief in their ability to change the environment. Children choose whether or not to engage in the behaviors they have learned. Their values and expectations of reinforcement affect whether they will imitate the behavior they observe.

Social cognitive theorists see children as active. Children intentionally seek out or create environments in which reinforcers are available. The child with artistic ability may develop her skills by taking art lessons and by imitating her art teacher. In doing so, she creates an environment of social reinforcement in the form of praise from others. This reinforcement, in turn, influences the child's view of herself as a good artist.

Observational learning accounts for much human learning. It occurs when children observe how parents cook, clean, or repair a broken appliance. It takes place when children watch teachers solve problems on the blackboard or hear them speak a foreign language. Observational learning does not occur because of direct reinforcement. It occurs so long as children pay attention to the behavior of others.

time-out A behavior-modification technique in which a child who misbehaves is temporarily removed from positive reinforcement.

social cognitive theory A cognitively oriented learning theory that emphasizes the role of observational learning in determining behavior.

Evaluation of Learning Theories

Learning theories have done a fine job of enabling us to describe, explain, predict, and influence many aspects of children's behavior. Psychologists and educators have

developed many applications of conditioning and social cognitive theory. The use of the bell-and-pad method for bedwetting is an example of behavior modification that probably would not have been derived from any other theoretical approach. Behavior modification has been used to help deal with autistic children, self-injurious children, and children showing temper tantrums and conduct disorders. Many of the teaching approaches used on educational TV shows are based on learning theory.

Yet learning-theory approaches to child development have been criticized. First, there is the theoretical question of whether the conditioning process in children is mechanical or whether it changes the ways in which children mentally represent the environment. Learning theorists may also underestimate the importance of maturational factors (Hergenhahn & Henley, 2014; Schultz & Schultz, 2012). Social cognitive theorists seem to be working on these issues. For example, they place more value on cognition than on conditioning and view children as being active, not as merely reacting mechanically to stimuli. Now let us turn to theories that place cognition at the heart of development.

Farrell Grehan/Historical/Corbis

Jean Piaget Piaget's cognitive-developmental theory is a stage theory that focuses on the ways children adapt to the environment by mentally representing the world and solving problems. Piaget's early training as a biologist led him to view children as mentally assimilating and accommodating aspects of their environment.

What Is the Cognitive Perspective on Child Development?

Cognitive theorists focus on children's mental processes. They investigate the ways in which children perceive and mentally represent the world, and how they develop thinking, logic, and problem-solving ability. One cognitive perspective is **cognitive-developmental theory**, advanced by Swiss biologist Jean Piaget (1896–1980). Another is information-processing theory.

Jean Piaget's Cognitive-Developmental Theory

During adolescence, Piaget studied philosophy, logic, and mathematics, but years later he took his Ph.D. in biology. In 1920, he obtained a job at the Binet Institute in Paris, where research on intelligence tests was being conducted. Piaget tried out tests on children in various age groups. The task became boring, but then Piaget grew interested in children's *wrong* answers to test items. Someone else might have shrugged them off these "errors" and forgotten them, but Piaget realized there were methods to the children's madness. Their so-called wrong answers reflected consistent—though illogical—mental processes. Piaget looked into the patterns of thought that led to the wrong answers.

Piaget wrote dozens of books and articles on these patterns, but his work was almost unknown in English-speaking countries until the 1950s. For one thing, Piaget's writing is difficult to understand, even to native French speakers. (Piaget joked that in his scientific theorizing, he had the advantage of *not* having to read Piaget.) For another, Piaget's views differed from those of other theorists. At the time, psychology in the United Kingdom and the United States was dominated by behaviorism and psychoanalysis, and Piaget's ideas had a biological–cognitive flavor. But today Piaget's views are quite popular.

Behaviorists such as John B. Watson saw children as "blank slates" that are written upon by experience. Freud's psychoanalytic theory focused on personality and emotional development. Piaget, by contrast, was concerned with how children form concepts or mental representations of the world, and how they work with concepts to plan changes in the external world. But, like the behaviorists, he recognized that thoughts cannot be measured directly, so he tried to link his views on children's mental processes to observable behavior.

Piaget believed that cognitive development largely depends on the maturation of the brain. He regarded maturing children as natural physicists who actively intend to learn about and take intellectual charge of their worlds. In the Piagetian view, children who squish their food and laugh enthusiastically are often acting as budding scientists. In addition to enjoying a response from parents, they are studying the

cognitive-developmental theory The stage theory that holds that the child's abilities to mentally represent the world and solve problems unfold as a result of the interaction of experience and the maturation of neurological structures.

texture and consistency of their food. (Parents, of course, often prefer that their children practice these experiments in the laboratory, not the dining room.)

Piaget's Basic Concepts

Piaget used the concepts of *schemes, adaptation, assimilation, accommodation,* and *equilibration* to describe and explain cognitive development. Piaget defines the **scheme** as a pattern of action or a mental structure that is involved in acquiring or organizing knowledge. Babies are said to have sucking schemes, grasping schemes, and looking schemes. (Others call these *reflexes.*) Newborn babies suck things that are placed in their mouths, grasp objects placed in their hands, and visually track moving objects. Piaget would say that infants' schemes give meaning to objects. Infants are responding to objects as "things I can suck" versus "things I can't suck" and as "things I can grasp" versus "things I can't grasp." Among older children, a scheme may be the inclusion of an object in a class. For example, the mammal class, or concept, includes a group of animals that are warm-blooded and nurse their young. The inclusion of cats, apes, whales, and people in the mammal class involves schemes that expand the child's knowledge of the natural world.

Adaptation reflects the interaction between the organism and the environment. According to Piaget, all organisms adapt to their environment; it is a natural biological tendency. Adaptation consists of assimilation and accommodation, which occur throughout life. In biology, one aspect of assimilation is the process by which food is digested and converted into the tissues that make up an animal. Cognitive **assimilation** is the process by which someone responds to new objects or events according to existing schemes or ways of organizing knowledge. Infants, for example, usually try to place new objects in their mouths to suck, feel, or explore them. Piaget would say that the child is assimilating (fitting) a new toy or object into the sucking-an-object scheme. Similarly, 2-year-olds who refer to sheep and cows as "doggies" or "bowwows" can be said to be assimilating these new animals into the doggy (or bowwow) scheme.

Sometimes, a novel object or event cannot be made to fit (that is, it cannot be assimilated into an existing scheme). In that case, the scheme may be changed or a new scheme may be created to incorporate the new event. This process is called **accommodation**. Consider the sucking reflex. Within the first month of life, infants modify sucking behavior as a result of their experience sucking various objects. The nipple on the breast or the bottle is sucked in one way, the thumb (or the big toe!) in a different way. Infants accommodate further by rejecting objects that are too large, taste bad, or have an undesirable texture or temperature.

Piaget theorized that when children can assimilate new events into existing schemes, they are in a state of cognitive harmony, or equilibrium. When something that does not fit happens along, their state of equilibrium is disturbed and they may try to accommodate. The process of restoring equilibrium is termed **equilibration**. Piaget believed that the attempt to restore equilibrium is the source of intellectual motivation and lies at the heart of the natural curiosity of the child.

scheme According to Piaget, an action pattern or mental structure that is involved in the acquisition and organization of knowledge.

adaptation According to Piaget, an interaction between the organism and the environment that consists of two processes: assimilation and accommodation.

assimilation According to Piaget, the incorporation of new events or knowledge into existing schemes.

accommodation According to Piaget, the modification of existing schemes to permit the incorporation of new events or knowledge.

equilibration The creation of an equilibrium, or balance, between assimilation and accommodation as a way of incorporating new events or knowledge.

Piaget's Stages of Cognitive Development

Piaget (1963) hypothesized that children's cognitive processes develop in an orderly sequence, or series, of stages. Some children may be more advanced than others at particular ages, but the developmental sequence remains the same. Piaget identified four major stages of cognitive development: *sensorimotor, preoperational, concrete operational,* and *formal operational.* These stages are described in Concept Review 1.2 and are discussed in subsequent chapters.

Because Piaget's theory focuses on cognitive development, its applications are primarily in educational settings. Teachers following Piaget's views engage the child actively in solving problems. They gear instruction to the child's developmental level and offer activities that challenge the child to advance to the next level. For example, 5-year-olds learn primarily through play and direct sensory contact with the