GLOBAL EDITION

Children and Their Development

SEVENTH EDITION

Robert V. Kail

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Seventh Edition

Global Edition

Robert V. Kail
Purdue University

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To Laura, Matt, and Ben

Brief Contents

Contents

Welcome

Like many professors-turned-textbook-authors, I wrote this book because none of the texts available met the aims of the child-development classes that I teach. In the next few paragraphs, I want to describe those aims and how this book is designed to achieve them.

Goal 1: Use effective pedagogy to promote students' learning. The focus on a student-friendly book begins with the structure of the chapters. Each chapter consists of three or four modules that provide a clear and well-defined organization to the chapter. Each module begins with a set of learning objectives and a vignette that introduces the topic to be covered. Special topics that are set off in other textbooks as feature boxes are fully integrated with the main text. Each module ends with several questions intended to help students check their understanding of the major ideas in the module.

The end of each chapter includes several additional study aids. "Unifying Themes" links the ideas in the chapter to a major developmental theme. "See for Yourself" suggests activities that allow students to observe topics in child development firsthand. "Test Yourself" questions further confirm and cement students' understanding of the chapter material. The "Summary" is a concise review of the chapter.

These different pedagogical elements *do* work; students using previous editions frequently comment that the book is easy to read and presents complex topics in an understandable way.

Goal 2: Use fundamental developmental issues as a foundation for students' learning of research and theory in child development. The child-development course sometimes overwhelms students because of the sheer number of topics and studies. In fact, today's child-development science is really propelled by a concern with a handful of fundamental developmental issues, such as the continuity of development and the roles of nature and nurture in development. In *Children and Their Development*, four of these foundational issues are introduced in Chapter 1 and then reappear in subsequent chapters to scaffold students' understanding. As I mentioned already, the end of the chapter includes the "Unifying Themes" feature, in which the ideas from the chapter are used to illustrate one of the foundational themes. By occurring repeatedly throughout the text, the themes remind students of the core issues that drive child-development science.

Goal 3: Teach students that child-development science draws on many complementary research methods, each of which contributes uniquely to scientific progress. In Module 1.4, I portray child-development research as a dynamic process in which scientists make a series of decisions as they plan their work. In the process, they create a study that has both strengths and weaknesses. Each of the remaining chapters of the book contains a "Focus on Research" feature that illustrates this process by showing—in an easy-to-read, question-and-answer format—the different decisions that investigators made in designing a particular study. The results are shown, usually with an annotated figure, so that students can learn how to interpret graphs. The investigators' conclusions are described, and I end each "Focus on Research" feature by mentioning the kind of converging evidence that would strengthen the authors' conclusions. Thus, the research methods introduced in Chapter 1 reappear in every chapter, depicting research as a collaborative enterprise that depends on the contributions of many scientists using different methods.

Goal 4: Show students how the findings from child-development research can improve children's lives. Child-development scientists and students alike want to know how the findings of research can be used to promote children's development. In Chapter 1, I describe the different means by which researchers can use their work to improve children's lives. In the chapters that follow, these ideas come alive in two special features: "Improving Children's Lives" provides research-based solutions to common problems in children's lives; "Child Development and Family Policy" demonstrates how research has inspired change in social policies that affect children and families. From these features, students realize that child-development research really matters—parents, teachers, and policymakers can use research to foster children's development.

New to the Seventh Edition

In updating the coverage of research, I have added hundreds of new citations to research published since 2010. I have also added significant new content to every chapter. Of particular note:

Chapter 1 includes updated examples of different research methods.

Chapter 2 has a new Focus on Research feature on hereditary bases of peer relationships, extensively revised

material on molecular genetics, and new material about methylation as an epigenetic mechanism.

Chapter 3 has new material on environmental pollutants, an updated section on the impact of cocaine, revised material on the impact of epidural analgesia, a new Focus on Research feature on links between maternal depression and children's behavior problems, and a revised Child Development and Family Policy feature.

Chapter 4 includes much-revised material on sleep, an updated section on ways to encourage young children to eat healthfully, much-revised material on the impact of timing of maturation on boys' development, a new list of factors that lead to obesity, a new Focus on Research feature on evaluating a program for preventing eating disorders, and a new Child Development and Family Policy feature on teenagers and the law.

Chapter 5 has much-revised coverage of face perception, new coverage of attention, and a new Focus on Research feature on infants' grasping.

Chapter 6 contains much-revised coverage of executive function and of naïve psychology (now called folk psychology).

Chapter 7 includes new material on the impact of children's misconceptions on their scientific thinking, a new Focus on Research feature on ways to teach children to design experiments, and much-revised coverage of reading and of quantitative reasoning.

Chapter 8 has completely revised coverage of dynamic assessment (formerly, dynamic testing), a new Focus on Research feature on making tests less threatening, a new Spotlight on Theory feature on the nature of impaired reading comprehension, and much-reorganized material on gifted children.

Chapter 9 contains revised coverage of the role of sentence cues in word learning, a new Focus on Research feature on why exposure to parents' speech increases children's vocabulary, and much-revised coverage on language acquisition in bilingual children.

Chapter 10 includes new material on perception of frightening stimuli, a much-revised Spotlight on Theories feature, a much-revised description of the stability of temperament and its links to personality, and a new Focus on Research feature on the long-term consequences of temperament.

Chapter 11 has reorganized coverage of self-awareness, new material on narcissism, a much-revised section on prejudice that includes new material on the impact of discriminatory behavior, and a new Focus on Research feature on factors that buffer youth from the impact of discriminatory behavior.

Chapter 12 contains new material on moral thinking as a core domain, a much-revised Cultural Influences feature, new material on the role of oxytocin in promoting social behavior, an updated Spotlight on Theories feature, and much-revised coverage of victims of aggression, including a new Child Development and Family Policy feature on an antibullying program.

Chapter 13 has extensively revised coverage of gender-related differences including new information on differences in memory and in effortful control, as well as new material on the "pink frilly dress" phenomenon and on tomboys.

Chapter 14 contains new material on genetic influence on parental style, on intervention programs that teach parenting skills, and on grandmothers as co-parents with incarcerated mothers, plus much-revised coverage of adopted children, including new material on open adoption.

Chapter 15 includes new material on children's play with pets, a revised feature on cultural differences in popularity, much-revised coverage of "new media" (e.g., smartphones, video games) and of day care, along with new material on links between poverty, stress, and children's health; on the impact of political violence and homelessness on children's development; and on contributions to school success of programs for mentoring and teacher training.

Ancillaries

Children and Their Development, Seventh Edition, is accompanied by a superb set of ancillary materials for instructors.

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MyVirtualChild

MyVirtualChild is an interactive simulation that allows students to raise a child from birth to age 18 and monitor the effects of their parenting decisions over time. By incorporating physical, social, emotional, and cognitive development at several age levels, MyVirtualChild helps students think critically as they apply their course work to

the practical experiences of raising a virtual child. You can access MyVirtualChild within MyPsychLab.

Instructor's Resource Manual (ISBN 1292073810)

Each chapter in the manual includes the following resources: Chapter Learning Objectives; Key Terms; Lecture Suggestions and Discussion Topics; Classroom Activities, Demonstrations, and Exercises; Out-of-Class Assignments and Projects; Lecture Notes, and Handouts. Designed to make your lectures more effective and save you preparation time, this extensive resource gathers together the most effective activities and strategies for teaching your developmental psychology course. Available for download on the Instructor's Resource Center at **www.pearsonglobaleditions.com/Kail.**

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PowerPoint Slides (ISBN 1292073845)

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— Robert V. Kail

To the Student

In this book, we'll trace children's development from conception through adolescence. Given this goal, you may expect to find chapters devoted to early childhood, middle childhood, and the like. But this book is organized differently—around topics. Chapters 2 through 5 are devoted to the genetic and biological bases of human development, and the growth of perceptual and motor skills. Chapters 6 through 9 cover intellectual development—how children learn, think, reason, and solve problems. Chapters 10 through 15 concern social and emotional development—how children acquire the customs of their society and learn to play the social roles expected of them.

This organization reflects the fact that when scientists conduct research on children's development, they usually study how some specific aspect of how a child develops. For example, a researcher might study how memory changes as children grow or how friendship in childhood differs from that in adolescence. Thus, the organization of this book reflects the way researchers actually study child development.

Organization of Chapters and Learning Aids

Each of the 15 chapters in the book includes two to four modules that are listed at the beginning of each chapter. Each module begins with a set of learning objectives phrased as questions, a mini-outline listing the major subheadings of the module, and a brief vignette that introduces the topic to be covered in the module. The learning objectives, mini-outline, and vignette tell you what to expect in the module.

Each module in Chapters 2 through 15 includes at least one special feature that expands on or highlights a topic. There are five different kinds of features:

Focus on Research provides details on the design and methods used in a particular research study. Closely examining specific studies demystifies research and shows that scientific work is a series of logical steps conducted by real people.

Cultural Influences shows how culture influences children and illustrates that developmental journeys are diverse. All children share the biological aspects of development, but their cultural contexts differ. This feature celebrates the developmental experiences of children from different backgrounds.

Improving Children's Lives shows how research and theory can be applied to improve children's development. These practical solutions to everyday problems show the relevance of research and theory to real life.

Child Development and Family Policy shows how results from research are used to create social policy that is designed to improve the lives of children and their families.

Spotlight on Theories examines an influential theory of development and shows how it has been tested in research.

Two other elements of the book are designed to help you focus on the main points of the text. First, whenever a key term is introduced in the text, it appears in ***italic*** like this and the definition appears in **black boldface type**. This format should make key terms easier for you to find and learn. Second, Summary Tables throughout the book review key ideas and provide a capsule account of each.

Each module concludes with "Check Your Learning" questions to help you review the major ideas in that module. There are three kinds of questions: recall, interpret, and apply. If you can answer the questions in "Check Your Learning" correctly, you are on your way to mastering the material in the module. However, do not rely exclusively on "Check Your Learning" as you study for exams. The questions are designed to give you a quick check of your understanding, not a comprehensive assessment of your knowledge of the entire module.

At the end of each chapter are several additional study aids. "Unifying Themes" links the contents of the chapter to the developmental themes introduced in Module 1.3. "See for Yourself" suggests some simple activities for exploring issues in child development on your own. "Test Yourself" questions further confirm and cement your understanding of the chapter material. Finally, the "Summary" provides a concise review of the entire chapter, organized by module and the primary headings within the module.

Terminology

Every field has its own terminology, and child development is no exception. I use several terms to refer to different periods of infancy, childhood, and adolescence. Although these terms are familiar, I use each to refer to a specific range of ages:

Newborn	Birth to 1 month
Infant	1 month to 1 year
Toddler	1 to 2 years
Preschooler	2 to 6 years
School-age child	6 to 12 years
Adolescent	12 to 18 years
Adult	18 years and older

Sometimes, for the sake of variety, I use other terms that are less tied to specific ages, such as *babies*, *youngsters*, and *elementary-school children*. When I do, you will be able to tell from the context what groups are being described.

I also use specific terminology in describing research findings from different cultural and ethnic groups. The appropriate terms to describe different cultural, racial, and ethnic groups change over time. For example, the terms *colored people*, *Negroes*, *Black Americans*, and *African Americans* have all been used to describe Americans who trace their ancestry to individuals who emigrated from Africa. In this book, I use the term *African American* because it emphasizes the unique cultural heritage of this group of people. Following this same line of reasoning, I use the terms *European American* (instead of *Caucasian* or *White*), *Native American* (instead of *Indian* or *American Indian*), *Asian American,* and *Hispanic American.*

These labels are not perfect. Sometimes they blur distinctions within ethnic groups. For example, the term *Hispanic American* ignores differences between individuals who came to the United States from Puerto Rico, Mexico, and Guatemala; the term *Asian American* blurs variations among people whose heritage is Japanese, Chinese, or Korean. Whenever researchers identified the subgroups in their research sample, I use the more specific terms in describing results. When you see the more general terms, remember that conclusions may not apply to all subgroups within the ethnic group.

A Final Word

I wrote this book to make child development come alive for my students at Purdue. Although I can't teach you directly, I hope this book sparks your interest in children and their development. Please let me know what you like and dislike about the book so that I can improve it in later editions. You can send email to me at **rkail@purdue.edu**—I'd love to hear from you.

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Children and Their Development

Chapter 1

Child Development: Theories, Themes, and Research

Modules

Beginning as a microscopic cell, every person takes a fascinating journey designed to lead to adulthood. This trip is filled with remarkably interesting and challenging events. In this book, we'll trace this journey as we learn about the science of child development, a multidisciplinary study of all aspects of growth from conception to young adulthood. As an adult, you've already lived the years that are the heart of this book. I hope you enjoy reviewing your own developmental path from the perspective of child-development research, and that this perspective leads you to new insights into the forces that have made you the person you are today.

Chapter 1 sets the stage for our study of child development. We begin, in **Module 1.1**, by looking at the philosophical foundations for child development and the events that led to the creation of child development as a new science. In **Module 1.2**, we examine theories that are central to the science of child development. In **Module 1.3**, we explore themes that guide much research in child development. Finally, in **Module 1.4**, we learn about the methods scientists use to study children and their development.

Setting the Stage

LEARNING OBJECTIVES

LO1 What ideas did philosophers have about children and childhood?

LO2 How did the modern science of child development emerge?

LO3 How do child-development scientists use research findings to improve children's lives?

OUTLINE

Kendra loves her 12-month-old son Joshua, but she's eager to return to her job as a loan officer at a local bank. Kendra knows a woman in her neighborhood who has cared for some of her friends' children, and they all think she is wonderful. But down deep Kendra wishes she knew more about whether this type of care is really best for Joshua. She also wishes that her neighbor's day-care center had a "stamp of approval" from someone who knows how to evaluate this kind of facility.

Kendra's concern about the best way to care for her infant son is the most recent in a long line of questions that she's had about Joshua since he was born. When Joshua was a newborn, Kendra wondered if he could recognize her face and her voice. As her son grows, she'll continue to have questions: Why is he so shy at preschool? Should he take classes for gifted children, or would he be better off in regular classes? What can she do to be sure that he doesn't use drugs?

These questions—and hundreds more like them—touch issues and concerns that parents such as Kendra confront regularly as they rear their children. And parents aren't the only ones asking these questions. Many professionals who deal with children—teachers, health care providers, and social workers, for example—often wonder what's best for children's development. Does children's self-esteem affect their success in school? Should we believe young children when they claim

they've been abused? And government officials must decide what programs and laws provide the greatest benefit for children and their families. How does welfare reform affect families? Are teenagers less likely to have sex when they participate in abstinence-only programs?

So many questions, and all of them important! Fortunately, the field of child development, which traces physical, mental, social, and emotional development from conception to maturity, provides answers to many of them. To begin, let's look at the origins of child development as a science.

Historical Views of Children and Childhood

LO1 What ideas did philosophers have about children and childhood?

For thousands of years, philosophers have speculated on the fundamental nature of childhood and the conditions that foster children's well-being. Plato (428–347 BC) and Aristotle (384–322 BC), the famous Greek philosophers, believed that schools and parents were responsible for teaching children the self-control that would make them effective citizens. But both philosophers, particularly Aristotle, worried that too much discipline would stifle children's initiative and individuality, making them unfit to be leaders.

Plato and Aristotle also had ideas about knowledge and how it was acquired. Plato argued that children are born with knowledge of many concrete objects, such as animals and people, as well as with knowledge of abstractions such as courage, love, and goodness. In Plato's view, children's experiences simply trigger knowledge they've had since birth. The first time a child sees a dog, her innate knowledge allows her to recognize it as such; no learning is necessary. In contrast, Aristotle denied the existence of innate knowledge; instead, he theorized that knowledge is rooted in perceptual experience. Children acquire knowledge piece by piece, based on the information provided by their senses.

These contrasting views resurfaced during the Age of Enlightenment. The English philosopher John Locke (1632–1704), portrayed the human infant as a *tabula rasa* or "blank slate" and claimed that experience molds the infant, child, and adolescent into a unique individual. According to Locke, parents should instruct, reward, and discipline young children, gradually relaxing their authority as children grow. In our opening vignette, Locke would advise Kendra that Joshua's experiences in child care will surely affect his development (though Locke would not specify how).

During the following century, Locke's view was challenged by the French philosopher Jean Jacques Rousseau (1712–1778), who believed that newborns are endowed with a sense of justice and morality that unfolds naturally as children grow. During this unfolding, children move through the developmental stages that we recognize today—infancy, childhood, and adolescence. Instead of emphasizing parental discipline, Rousseau argued that parents should be responsive and receptive to their children's needs. Rousseau would emphasize the value of caregivers who are responsive to Joshua's needs.

Rousseau shared Plato's view that children begin their developmental journeys well prepared with a stockpile of knowledge. Locke, like Aristotle 2,000 years before him, believed that children begin these journeys packed lightly, but pick up necessary knowledge along the way, through experience. These philosophical debates might have continued for millennia except for a landmark event: the emergence of child development as a science.

QUESTION 1.1

Anne lets her 2-year-old explore and socialize on his own. She guides her son to discover his potential by encouraging him to make his own decisions and by letting him participate in activities. She prefers to let her son experience new things rather than give him strict instructions on how to behave. In which philosophy of child development is Anne's parenting rooted?

Origins of a New Science

LO2 How did the modern science of child development emerge?

The push toward child development as a science came from two unexpected events in England in the 19th century. One was the Industrial Revolution. Beginning in the mid-1700s, England was transformed from a largely rural nation relying on agriculture to an urban-oriented society organized around factories, including textile mills that produced cotton cloth. Children moved with their families to cities and worked long hours in factories, under horrendous conditions, for little pay. Accidents were common and many children were maimed or killed. In the textile mills, for example, the youngest children often were tasked with picking up loose cotton from beneath huge power looms as the machines were running.

Reformers were appalled at these conditions and worked to enact laws that would limit child labor and put more children in schools. These initiatives were the subject of prominent political debates throughout much of the 1800s; after all, the factory owners were among the most powerful people in Britain, and they opposed efforts to limit their access to plentiful, cheap labor. But the reformers carried the day and in the process made the well-being of children a national concern.

Also setting the stage for a new science of child development was Charles Darwin's groundbreaking work on evolution. He argued that individuals within a species differ: some individuals are better adapted to a particular environment, making them more likely to survive and to pass along their characteristics to future generations. Some scientists of the day noted similarities between Darwin's description of evolutionary change in species and age-related changes in human behavior. **This prompted many scientists—including Darwin himself—to write *baby biographies*, detailed, systematic observations of individual children.** The observations in the biographies were often subjective and conclusions were sometimes reached based on minimal evidence. Nevertheless, the systematic and extensive records in baby biographies paved the way for objective, analytic research.

Taking the lead in the new science at the dawn of the 20th century was G. Stanley Hall (1844–1924), who generated theories of child development based on evolutionary theory and conducted studies to determine age trends in children's beliefs about a range of topics. More importantly, Hall founded the first scientific journal in English that published findings from child-development research. Hall also founded a child-study institute at Clark University and was the first president of the American Psychological Association.

Meanwhile, in France Alfred Binet (1857–1911) had begun to devise the first mental tests, which we'll examine in Module 8.2. In Austria, Sigmund Freud (1856–1939) had startled the world by suggesting that the experiences of early childhood accounted for behavior in adulthood; and in the United States, John B. Watson (1878–1958), the founder of behaviorism, had begun to write and lecture on the importance of reward and punishment for child-rearing practices. (You'll learn more about Freud's and Watson's contributions in Module 1.2.)

In 1933, these emerging scientific forces came together in a new interdisciplinary organization, the Society for Research in Child Development (SRCD). Among its members were psychologists, physicians, educators, anthropologists, and biologists, all linked by a common interest in discovering the conditions that would promote children's welfare and foster their development (Parke, 2004). In the ensuing years, SRCD has grown to a membership of more than 5,000 scientists and is now the main professional organization for child-development researchers. SRCD, along with similar organizations devoted to child-development science

(e.g., International Society for the Study of Behavioural Development, International Society on Infant Studies, Society for Research on Adolescence) promotes multidisciplinary research and encourages application of research findings to improve children's lives.

Applying Results of Research

LO3 How do child-development scientists use research findings to improve children's lives?

Child-development researchers have learned about ways to enhance children's development. Because of this success, a new branch of child-development research has emerged. ***Applied developmental science*** **uses developmental research to promote healthy development, particularly for vulnerable children and families** (Lerner, Fisher, & Giannino, 2006). Scientists with this research interest contribute to sound family policy through a number of distinct pathways (Shonkoff & Bales, 2011). Some ensure that consideration of policy issues and options is based on factual knowledge derived from child-development research: When government officials need to address problems affecting children, child-development experts can provide useful information about children and their development (Shonkoff & Bales, 2011). Others contribute by serving as advocates for children. Working with a child-advocacy group, child-development researchers can alert policymakers to children's needs and can argue for family policy that addresses those needs. Still other child-development experts evaluate the impact of government policies (e.g., the No Child Left Behind Act) on children and families (Yarrow, 2011). Finally, a particularly good way to sway policymakers is to create a working program. When researchers create a program that effectively combats problems affecting children or adolescents (e.g., sudden infant death syndrome or teenage pregnancy), this can become powerful ammunition for influencing policy (Huston, 2008).

Thus, from its origins more than 100 years ago, modern child-development science has become a mature discipline, generating a vast catalog of knowledge of children. Scientists actively use this knowledge to improve children's lives, as we'll see in the "Child Development and Family Policy" features that appear in many chapters throughout the book. The research that you'll encounter throughout this book is rooted in a set of developmental theories that provide the foundation of modern child-development research; they are the focus of the next module.

Check Your Learning

RECALL What two events set the stage for the creation of child-development science?

Who were the leaders of the new field of child development before the formation of the SRCD?

INTERPRET Explain the similarities between Rousseau and Plato's views of child development; how did their views differ from those shared by Locke and Aristotle?

APPLY Suppose a child-development researcher was an expert on the impact of nutrition on children's physical and emotional development. Describe several different ways in which the researcher might help to inform public policy concerning children's nutrition.

Foundational Theories of Child Development

LEARNING OBJECTIVES

LO4 What are the major tenets of the biological perspective?

LO5 How do psychodynamic theories account for development?

LO6 What is the focus of learning theories?

LO7 How do cognitive-developmental theories explain changes in children's thinking?

LO8 What are the main elements of the contextual approach?

OUTLINE

Will has just graduated from high school, first in his class. For his proud mother, Betty, this is a time to reflect on Will's past and ponder his future. Will has always been a happy, easygoing child and he's always been interested in learning. Betty wonders why he is so perpetually good natured and so curious. If she knew the secret, she laughed, she could write a best-selling book and be a guest on The Colbert Report!

Before you read on, stop for a moment and think about Betty's question. How would you explain Will's good nature, his interest in learning, and his curiosity? Perhaps Betty has been a fantastic mother, doing all the right things at just the right time? Perhaps year after year his teachers quickly recognized Will's curiosity and encouraged it? Or was it simply Will's destiny to be this way?

Each of these explanations is a simple theory: Each tries to explain Will's curiosity and good nature. In child-development research, theories are much more complicated, but the purpose is the same: to explain behavior and development. **In child-development science, a *theory* is an organized set of ideas that is designed to explain and make predictions about development.**

A theory leads to hypotheses that we can test in research; in the process, each hypothesis is confirmed or rejected. Think about the different explanations for Will's behavior. Each one leads to unique hypotheses. If, for example, teachers' encouragement has caused Will to be curious, we hypothesize that he should no longer be curious if teachers stop encouraging that curiosity. When the outcomes of research are as hypothesized, the theory gains support. When results run counter to the hypothesis, the theory is incorrect and is revised. These revised theories then provide the basis for new hypotheses, which lead to new research, and the cycle continues. With each step along the way, the theory comes closer to becoming a complete account. Throughout the book, in Spotlight on Theories features, we'll look at specific theories, the hypotheses derived from them, and the outcome of research testing those hypotheses.

Over the history of child development as a science, many theories have guided research and thinking about children's development. The earliest developmental theories paved the way for newer, improved theories. In this module, I describe the theories that provide the scientific foundation for modern ones because the newer theories that I describe later in the book are best understood in terms of their historical roots.

Many early theories shared assumptions and ideas about children and development. Grouped together, they form five major theoretical perspectives in child-development research: the biological, psychodynamic, learning, cognitive-developmental, and contextual perspectives.

The Biological Perspective

LO4 What are the major tenets of the biological perspective?

According to the biological perspective, intellectual and personality development, as well as physical and motor development, are rooted in biology. One of the first biological theories, maturational theory, was proposed by Arnold Gesell (1880–1961). **According to *maturational theory*, child development reflects a specific and prearranged scheme or plan within the body.** In Gesell's view, development is simply a natural unfolding of a biological plan; experience matters little. Like Jean Jacques Rousseau 200 years before him, Gesell encouraged parents to let their children develop naturally. Without interference from adults, Gesell claimed, such behaviors as speech, play, and reasoning would emerge spontaneously according to a predetermined developmental timetable.

Maturational theory was discarded because it had little to say about the impact of the environment on children's development. However, other biological theories give greater weight to experience. ***Ethological theory* views development from an evolutionary perspective.** In this theory, many behaviors are adaptive; that is, they have survival value. For example, clinging, grasping, and crying are adaptive for infants because they elicit caregiving from adults. Ethological theorists assume that people inherit many of these adaptive behaviors.

So far, ethological theory seems like maturational theory, with a dash of evolution for taste. How does experience fit in? Ethologists believe that all animals are biologically programmed so that some kinds of learning occur only at certain ages. **A *critical period* is the time in development when a specific type of learning can take place; before or after the critical period, the same learning is difficult or even impossible.**

One well-known example of a critical period comes from the work of Konrad Lorenz (1903–1989), a zoologist who noticed that newly hatched chicks follow their mother. He theorized that chicks are biologically programmed to follow the first moving object that they see. **Usually this was the mother, so following her was the first step in *imprinting*, creating an emotional bond with the mother.** Lorenz tested his theory by showing that if some other object moved by newborn chicks, they would follow that object and treat it as "Mother." As the photo shows, this included Lorenz himself! But the chick had to see the moving object within about a day of hatching. Otherwise, the chick would not imprint on the moving object. In other words, the critical period for imprinting lasts about a day; when chicks experience the moving object outside of the critical period, imprinting does not take place. Even though the underlying mechanism is biological, experience is essential for triggering programmed, adaptive behaviors.

Newly hatched chicks follow the first moving object they see, treating it as "Mother" even when it's a human.

Ethological theory and maturational theory both highlight the biological bases of child development.

Biological theorists remind us that children's behavior is the product of a long evolutionary history. Consequently, a biological theorist would tell Betty that Will's good nature and his outstanding academic record are both largely products of his biological endowment—his heredity.

QUESTION 1.2

Keunho and Young-shin are sisters who moved to Toronto from Korea when they were 15 and 10 years old, respectively. Although both of them have spoken English almost exclusively since their arrival in Canada, Keunho still speaks with a bit of an accent and occasionally makes grammatical errors; Young-shin's English is flawless—she speaks like a native. How could you explain Young-shin's greater skill in terms of a critical period?

The Psychodynamic Perspective

LO5 How do psychodynamic theories account for development?

The psychodynamic perspective is the oldest scientific perspective on child development, originating in the work of Sigmund Freud (1856–1939) in the late 19th and early 20th centuries. Freud was a physician whose patients were adults with disorders that seemed to have no obvious biological causes. As Freud listened to his patients describe their problems and their lives, he became convinced that early experiences establish patterns that endure throughout a person's life. **Using his patients' case histories, Freud created the first *psychodynamic theory*, which holds that development is largely determined by how well people resolve conflicts they face at different ages.**

The role of conflict is evident in Freud's description of the three primary components of personality. **The *id* is a reservoir of primitive instincts and drives.** From birth, the id presses for immediate gratification of bodily needs and wants. A hungry baby crying illustrates the id in action. **The *ego* is the practical, rational component of personality.** The ego begins to emerge during the first year of life, as infants learn that they cannot always have what they want. The ego tries to resolve conflicts that occur when the instinctive desires of the id encounter the obstacles of the real world. The ego often tries to channel the id's impulsive demands into socially more acceptable channels. For example, in the photo, the child without the toy is obviously envious of the child who has the toy. According to Freud, the id would urge the child to grab the toy, but the ego would encourage the child to play with the peer and, in the process, the attractive toy.

The third component of personality, the *superego*, is the "moral agent" in the child's personality. It emerges during the preschool years as children begin to internalize adult standards of right and wrong. If the peer in the previous example left the attractive toy unattended, the id might tell the child to grab the toy and run; the superego would remind the child that taking another's toy would be wrong.

According to Freud's theory, the id would encourage the child on the right to grab the toy away from the other child, but the superego would remind her that this would be wrong.

Today, scientists recognize many shortcomings that undermine Freud's theory as a whole (e.g., some key ideas are too vague to be tested in research). Nevertheless, two of Freud's insights have had lasting impact on child-development research and theory. First, he noted that early experiences can have enduring effects on children's development. Second, he suggested that children often experience conflict between what they want to do and what they know they should do.

Erikson's Psychosocial Theory Erik Erikson (1902–1994), Freud's student, embraced Freud's idea of conflict, but he emphasized the psychological and social aspects of conflict rather than the biological

TABLE 1-1

ERIKSON'S EIGHT STAGES OF PSYCHOSOCIAL DEVELOPMENT

Psychosocial Stage	Age	Challenge
Basic trust versus mistrust	Birth to 1 year	To develop a sense that the world is safe, a "good place"
Autonomy versus shame and doubt	1 to 3 years	To realize that one is an independent person who can make decisions
Initiative versus guilt	3 to 6 years	To develop a willingness to try new things and to handle failure
Industry versus inferiority	6 years to adolescence	To learn basic skills and to work with others
Identity versus identity confusion	Adolescence	To develop a lasting, integrated sense of self
Intimacy versus isolation	Young adulthood	To commit to another in a loving relationship
Generativity versus stagnation	Middle adulthood	To contribute to younger people, through child rearing, child care, or other productive work
Integrity versus despair	Late life	To view one's life as satisfactory and worth living

and physical aspects. **In Erikson's *psychosocial theory*, development consists of a sequence of stages, each defined by a unique crisis or challenge.** The complete theory includes the eight stages shown in Table 1-1. The name of each stage reflects the challenge that individuals face at a particular age. For example, the challenge for adolescents is to develop an identity. Adolescents who do not meet this challenge will not establish truly intimate relationships but will become overly dependent on their partners as a source of identity.

Whether we call them conflicts, challenges, or crises, the psychodynamic perspective emphasizes that the trek to adulthood is difficult because the path is strewn with obstacles. Outcomes of development reflect the manner and ease with which children surmount life's barriers. When children overcome early obstacles easily, they are better able to handle the later ones. Returning to this module's opening vignette, a psychodynamic theorist would tell Betty that Will's cheerful disposition and his academic record suggest that he handled life's early obstacles well, which is a good sign for his future development.

The Learning Perspective

LO6 What is the focus of learning theories?

Early Learning Theories Learning theorists endorse John Locke's view that the infant's mind is a blank slate on which experience writes. John Watson was the first theorist to apply this approach to child development, arguing that learning from experience determines what children will be.

Watson did little research to support his claims, but B. F. Skinner (1904–1990) filled this gap. **Skinner studied *operant conditioning*, in which the consequences of a behavior determine whether a behavior is repeated.** Skinner showed that two kinds of consequences were especially influential. **A *reinforcement* is a consequence that increases the future likelihood of the behavior that it follows.** Positive reinforcement consists of giving a reward—such as chocolate, gold stars, or paychecks—to increase the likelihood of repeating a previous behavior. When parents want to encourage their daughter to clean her room, they could use positive reinforcement by rewarding her with praise, food, or money whenever she completed the chore. Negative reinforcement consists of rewarding people by taking away unpleasant things. The same parents could use negative reinforcement by saying that whenever their daughter cleaned her room, she wouldn't have to wash the dishes or fold laundry.

A *punishment* is a consequence that decreases the future likelihood of the behavior that it follows. Punishment suppresses a behavior by either adding something aversive or by withholding a pleasant event. When the child failed to clean her room, the parents could punish her by making her do extra chores (adding something aversive) or by not allowing her to watch television (withholding a pleasant event).

Applied properly, reinforcement and punishment are powerful influences on children. However, children often learn without reinforcement or punishment. **Children learn much simply by watching those around them, which is known as *imitation* or *observational learning***. For example, imitation occurs when one toddler throws a toy after seeing a peer do so, or when a school-age child offers to help an older adult carry groceries because she's seen her parents do the same, or, as in the photo, when a son tries to shave like his father.

Throughout development, children learn much from imitating the actions of others.

Social Cognitive Theory Perhaps imitation makes you think of "monkey-see, monkey-do," or simple mimicking. Early investigators had this view, too, but research quickly showed that this was wrong. Children do not always imitate what they see around them. Instead, children are more likely to imitate when the person they see is popular, smart, or talented. They're also more likely to imitate when the behavior they see is rewarded than when it is punished. Findings like these imply that imitation is more complex than sheer mimicry. Children do not mechanically copy what they see and hear; instead, they look to others for information about appropriate behavior. When popular, smart peers are reinforced for behaving in a particular way, it makes sense to imitate them.

Albert Bandura (1925–) based his *social cognitive theory* on this more complex view of reward, punishment, and imitation. Bandura calls his theory "cognitive" because he believes that children are actively trying to understand what goes on in their world; the theory is "social" because, along with reinforcement and punishment, what other people do is an important source of information about the world (Bandura, 2006, 2012).

Bandura also argues that experience gives children a sense of *self-efficacy*, beliefs about their own abilities and talents. Self-efficacy beliefs help determine when children imitate others. A child who sees himself as athletically untalented, for example, will not try to imitate LeBron James dunking a basketball, despite the fact that LeBron is obviously talented and popular. But the youngster in the photo is likely to imitate LeBron because he believes he's talented and thus it makes sense to try to imitate LeBron. Thus, whether children imitate others depends on who the other person is, whether that person's behavior is rewarded, and children's beliefs about their own talents.

Bandura's social cognitive theory is a far cry from Skinner's operant conditioning. The social cognitive child, who actively interprets events, has replaced the operant conditioning child, who responds mechanically to reinforcement and punishment. Nevertheless, Skinner, Bandura, and all learning theorists share the view that experience propels children along their developmental journeys. Returning to this module's opening scenario, they would tell Betty that she can thank experience for making Will both happy and successful academically.

When someone is as talented as LeBron James, it makes sense for others to try to imitate him—and young children often do just that, they mimic LeBron and other talented people.

The Cognitive-Developmental Perspective

LO7 **How do cognitive-developmental theories explain changes in children's thinking?**

The *cognitive-developmental perspective* focuses on how children think and on how their thinking changes as they grow. Jean Piaget (1896–1980) proposed

In Piaget's theory, even infants have rudimentary theories about objects and their properties.

the best known of these theories. He believed that youngsters naturally try to make sense of their world. Infants, children, and adolescents want to understand the workings of both the physical and the social world. For example, infants want to know about objects: "What happens when I push this toy off the table?" And they want to know about people: "Who is this person who feeds and cares for me?"

Piaget argued that as children try to comprehend their world, they act like scientists in creating theories that organize what they know about objects and people. These theories are tested daily by experience because they lead children to expect certain things to happen. As with real scientific theories, when the predicted events occur, a child's belief in her theory grows stronger. When the predicted events do not occur, the child revises her theory. For example, think about the baby in the photo. Her theory of objects like the rattle she's holding might include the idea that "If I let go of a rattle, it will fall to the floor." If the infant drops some other object—a plate or an article of clothing—she will find that it, too, falls to the floor and she can make the theory more general: Objects that are dropped fall to the floor.

Piaget also believed that at a few critical points in development, children realize their theories have basic flaws. When this happens, children revise their theories radically. These changes are so fundamental that the revised theory is, in many respects, a brand-new theory. Piaget claimed that radical revisions occur three times in development: once at about age 2, a second time at about age 7, and a third time just before adolescence. These radical changes mean that children go through four distinct stages in cognitive development. Each stage represents a fundamental change in how children understand and organize their environment, and each stage is characterized by more sophisticated types of reasoning. For example, the sensorimotor stage begins at birth and lasts until about age 2. As the name implies, sensorimotor thinking is closely linked to the infant's sensory and motor skills. This stage and the three later stages are shown in Table 1-2.

According to Piaget, children's thinking becomes more sophisticated as they develop, reflecting the more sophisticated theories that children create. Returning to our opening scenario, Piaget would have little to say about Will's good nature. As for his academic success, Piaget would explain that all children naturally want to understand their worlds; Will is simply unusually skilled in this regard. In Module 6.1, we will further explore Piaget's contribution to our understanding of cognitive development, as well as more modern theories.

TABLE 1-2

PIAGET'S FOUR STAGES OF COGNITIVE DEVELOPMENT

Stage	Approximate Age	Characteristics
Sensorimotor	Birth to 2 years	Infant's knowledge of the world is based on senses and motor skills. By the end of the period, infant uses mental representations.
Preoperational	2 to 6 years	Child learns how to use symbols such as words and numbers to represent aspects of the world but relates to the world only through his or her perspective.
Concrete operational	7 to 11 years	Child understands and applies logical operations to experiences, provided the experiences are focused on the here and now.
Formal operational	Adolescence and beyond	Adolescent or adult thinks abstractly, speculates on hypothetical situations, and reasons deductively about what may be possible.