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Human Development

A Life-Span View

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Preface

"What do you want to be when you grow up?" "Where do you see yourself in the next 5 or 10 years?" "What kind of person do you want to become?" These and other questions about "becoming" confront us across our lives. Answering them requires us to understand ourselves in very thorough ways. It requires us to understand how we develop.

Human development is both the most fascinating and the most complex science there is. *Human Development: A Life-Span View*, Ninth Edition, introduces you to the issues, forces, and outcomes that make us who we are.

Contemporary research and theory on human development consistently emphasize the multidisciplinary approach needed to describe and explain how people change (and how they stay the same) over time. Moreover, the great diversity of people requires an appreciation for individual differences throughout development. *Human Development: A Life-Span View*, Ninth Edition, incorporates both and aims to address three specific goals:

- To provide a comprehensive, yet highly readable, account of human development across the life span.
- To provide theoretical and empirical foundations that enable students to become educated and critical interpreters of developmental information.
- To provide a blend of basic and applied research, as well as controversial topics and emergent trends, to demonstrate connections between the laboratory and life and the dynamic science of human development.

Organization

A Modified Chronological Approach

Authors and instructors in the field of human development must decide whether to take a *chronological approach* (focusing on functioning at specific stages of the life span, such as infancy, adolescence, and middle adulthood) or a *topical approach* (following a specific aspect of development, such as personality, throughout the life span). Both approaches have merits. We chose a modified chronological approach that combines the best aspects of both. The overall organization of the text is chronological: We trace development from conception through late life in sequence and dedicate several chapters to topical issues pertaining to particular periods in the life span (such as infancy and early childhood, adolescence, young adulthood, middle adulthood, and late life).

Because the developmental continuity of such topics as social and cognitive development gets lost with narrowly defined, artificial age-stage divisions, we dedicate some chapters to tracing their development over larger segments of the life span. These chapters provide a much more coherent description of important developmental changes, emphasize the fact that development is not easily divided into "slices," and provide students with understandable explications of developmental theories.

Balanced Coverage of the Entire Life Span

A primary difference between *Human Development: A Life-Span View*, Ninth Edition, and other texts is that we provide a richer and more complete description of adult development and aging. Following the introductory chapter, the remaining 15 chapters of the text are evenly divided between childhood, adolescence, adulthood, and aging. This balanced

treatment reflects not only the rapid emergence of adult development and aging as a major emphasis in the science of human development but also recognizes that roughly three-fourths of a person's life occurs beyond adolescence.

As a reflection of our modified chronological approach, *Human Development: A Life-Span View*, Ninth Edition, is divided into four main parts. After an introduction to the science of human development (Chapter 1), Part One includes a discussion of the biological foundations of life (Chapter 2) and development during infancy and early childhood (Chapters 3–5). Part Two focuses on development during middle childhood and adolescence (Chapters 6–9). Part Three (Chapters 10–13) focuses on young and middle adulthood. Part Four examines late adulthood (Chapters 14 and 15) and concludes with a consideration of dying and bereavement (Chapter 16).

Content and Approach: The Biopsychosocial Emphasis

Our text provides comprehensive, up-to-date coverage of research and theory from conception to old age and death. We explicitly adopt the biopsychosocial framework as an organizing theme, describing it in depth in Chapter 1, then integrating it throughout the text—often in combination with other developmental theories.

An Engaging Personal Style

On several occasions, we communicate our personal involvement with the issues being discussed by providing examples from our own experiences as illustrations of how human development plays itself out in people's lives. Additionally, every major section of a chapter opens with a short vignette, helping to personalize a concept just before it is discussed. Other personalized examples are integrated throughout the text narrative and showcased in the *Real People* features.

Emphasis on Inclusiveness

In content coverage, in the personalized examples used, and in the photo program, we emphasize diversity—within the United States and around the world—in ethnicity, gender, race, age, ability, and sexual orientation.

Changes in the Ninth Edition

The ninth edition has been updated with new graphics and several hundred new reference citations to work from the past 3 years. Of particular note are these content additions, updates, and revisions:

Chapter 1

- New *Real People* feature on Ellis Marsalis, famed jazz musician who died from COVID-19
- Intersectionality added as an example of the complexity of sociocultural forces and how those play out in life
- Introduce Black Lives Matter movement as a sociocultural force in human development that will be referenced in later chapters as well
- Coronavirus pandemic examples used to illustrate life cycle forces, how development forces interact, and cohort effects; research on COVID-19 will be included in several later chapters
- New subsection "Tools for Doing and Archiving Research" that discusses online research skills training, tools for constructing surveys, and various data libraries and repositories

Chapter 2

- Revised *Diverse Perspectives* feature on access to reproductive technology
- New *Linking Research to Life* feature on help for depressed mothers
- Updated summary of research on the impact of cell phone use during pregnancy
- Much revised coverage of developmental trajectories for premature infants
- Updated description of gene therapy (CRISPR)

Chapter 3

- New *Diverse Perspectives* feature on promoting breastfeeding
- New *Linking Research to Life* feature on sudden infant death syndrome
- Updated coverage of the impact of early experience on motor development
- Updated coverage of co-sleeping

Chapter 4

- Much revised coverage of infants' naïve physics
- New *Diverse Perspectives* feature on interventions to foster language
- New *Linking Research to Life* feature on methods for interviewing children
- New material on language learning in bilingual children from immigrant families

Chapter 5

- New *Linking Research to Life* feature on the impact of child care on attachment
- New *Real People* feature illustrating the use of reasoning to promote prosocial behavior
- New material on the early development of transgender children
- New *Diverse Perspectives* feature on single-sex schools
- New material on the impact of media on children's learning of gender

Chapter 6

- New *Diverse Perspectives* feature on the impact of cultural differences in parenting on math achievement
- New *Linking Research to Life* feature on oral language interventions to promote reading skills
- Updated coverage of attention-deficit/hyperactivity disorder (ADHD) treatments
- New coverage of wisdom in Sternberg's theory of successful intelligence
- Much revised coverage of the development of math skills in childhood

Chapter 7

- New *Diverse Perspectives* feature on families headed by same-sex parents
- Much reworked presentation of parents' use of reward and punishment, including new material on the perils of praise
- New *Linking Research to Life* features on programs to treat child maltreatment
- New *Spotlight on Research* feature on the impact of negative feedback from social media
- Much reworked presentation of prejudice, now grounded in children's understanding of groups

Chapter 8

- Material on promoting moral development revised and recast as *Linking Research to Life* feature
- New *Diverse Perspectives* feature on transgender athletes
- New *Spotlight on Research* feature on adolescents who use analytic solutions
- Much revised coverage of the potential risks associated with participating in sports

Chapter 9

- New *Spotlight on Research* feature on parental socialization and children's ethnic-racial identity
- Much revised coverage of self-esteem in adolescence
- Much revised coverage of sexual behavior during adolescence
- New *Linking Research to Life* feature on preventing dating violence
- New *Diverse Perspectives* feature on juveniles sentenced to life imprisonment without parole

Chapter 10

- New discussion of the concept of *established adulthood* (ages 30–45) as a new phase of adulthood
- New *Real People* feature on Billie Eilish
- New *Linking Research to Life* feature on the connection between community spread of COVID-19 and the start of in-person classes at universities during fall semester 2020
- Very low-density lipoproteins (VLDLs) added to discussion of the role of cholesterol in health
- Revised discussions on possible selves and personal control beliefs integrates them into the MAPS model

Chapter 11

- Added process model of adult friendships
- Discussion regarding affirmative consent regarding sexual activity added
- New *Linking Research to Life* feature on the Violence Against Women Act and its demise
- Added international data and discussion about global marriage rates and age at first marriage
- New discussion of the effects of systemic racism on African American parents and the need for "The Talk"

Chapter 12

- Added the concept of employability skills mapping as new form of career counseling
- Added concepts of reverse mentoring, reciprocal mentoring, and micro-mentoring
- New *Real People* feature and discussion in the text on burnout among healthcare workers during the pandemic
- New section head "Diversity and Occupational Development" and refocused discussion and section on Discrimination completely revised and expanded
- New *Linking Research to Life* feature on the Families First Coronavirus Response Act and material regarding COVID-19-related stresses on employed parents

Chapter 13

- More complete discussion of medication to slow bone loss and prevent fractures
- New *Diverse Perspectives* feature on the opioid crisis
- New *Spotlight on Research* feature about African American adults tinkering toward a computer coding bootcamp
- New discussion about the neuroscience evidence for the Big Five personality traits
- New *Linking Research to Life* feature on legal and social program support for grandfamilies

Chapter 14

- New *Diverse Perspectives* feature on cultural aspects of wisdom
- New discussion of ketamine and esketamine, new rapid drug treatments and brain stimulation and alternative (e.g., yoga) treatments of depression
- Updated discussion on new blood test for tau proteins to diagnose Alzheimer's disease and discuss evidence for racial and ethnic differences in genetic risk pathways
- New *Spotlight on Research* feature on Montessori activities delivered by family carers to nursing home residents with dementia
- New *Linking Research to Life* feature on assessing adults with diminished capacity

Chapter 15

- New *Linking Research to Life* feature on tax credits for providing care to family members
- New *Spotlight on Research* feature on race as a moderator of the disablement process
- New *Diverse Perspectives* feature on equity issues in Social Security and Medicare
- New discussions about race/ethnic disparities and intersectionality in financial security and disablement in late life
- New inclusion of The Hogeweyk® housing for people with dementia, biophilic design, and cluster housing as alternatives for older adults who are frail

Chapter 16

- Discussion about the Death Over Dinner movement to provide safe contexts in which to discuss death and related issues
- Expanded discussion of death doulas, with connection to indigenous peoples.
- New *Linking Research to Life* feature on end-of-life decisions in the context of COVID-19
- New *Spotlight on Research* feature on the impacts of child death and stillbirth on Northern Indian parents
- New *Diverse Perspectives* feature on the pain of virtual goodbyes and how they related to healthcare disparities

Special Features

The special features are a significant reason why this textbook is unique. These features are woven seamlessly into the narrative—not boxed off from the flow of the chapter. Each feature appears in nearly every chapter. The features are:

Spotlight on Research	These features emphasize a fuller understanding of the science and scope of life-span development.
Diverse Perspectives: What Do *You* Think?	These features ask students to think critically about social and developmental issues.
Linking Research to Life	These features focus on how human development research is used to inform and create public policy.
Real People: Applying Human Development	These features illustrate the everyday applications of life-span development issues.

Pedagogical Features

Among the most important aspects of *Human Development: A Life-Span View*, Ninth Edition, is its exceptional integration of pedagogical features, designed to help students maximize their learning.

- *Section-by-Section Pedagogy*. Each major section of a chapter (every chapter has four or five) has been carefully crafted: Each one opens with a set of Key Questions, a vignette; typically includes one or more *Think About It* questions in the margin encouraging critical thinking; and ends with a set of questions called *Test Yourself* that reinforces key elements of the section. For easy assignment and to help readers visually organize the material, major units within each chapter are numbered.
- *Chapter-by-Chapter Pedagogy*. Each chapter opens with a set of learning objectives, as well as a table of contents and concludes with a bulleted, detailed *Summary* (broken down by key questions within each major section), followed by a list of *Key Terms* (with page references).

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

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MindTap is a platform that propels students from memorization to mastery. It gives you complete control of your course, so you can provide engaging content, challenge every learner, and build student confidence. Customize interactive syllabi to emphasize priority topics, then add your own material or notes to the eBook as desired. This outcomes-driven application gives you the tools needed to empower students and boost both understanding and performance.

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MindTap® activities for the Ninth Edition of this text were informed by surveys and focus groups of Lifespan Psychology instructors and students. We've revised MindTap® based on their feedback for a better organized, more intuitive digital experience. In addition to the benefits of the platform, MindTap® for *Human Development: A Life-Span View* includes:

- Formative assessments at the conclusion of each chapter.
- Interactive activities drawn from the *Diverse Perspectives* and *Real People* text features that foster student participation through polls, photo shares, and discussion threads.
- Response-based activities at the start of every chapter designed to spark interest in upcoming topics.
- Research Application activities that challenge students to use critical thinking skills as they review the variables, findings, and conclusions of research studies.
- Illustrative video embedded in the MindTap® Reader to highlight key concepts for the students.
- Investigate Development that enables students to observe, evaluate, and see 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.

Supplements for the Instructor

Additional instructor resources for this product are available online. Instructor assets include an Instructor's Manual, Educator's Guide, PowerPoint® slides, Guide to Online Teaching, and a test bank powered by Cognero®. Sign up or sign in at www.cengage.com to search for and access this product and its online resources.

Acknowledgments

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We would also like to thank the many reviewers who generously gave their time and effort to help us sharpen our thinking about human development and, in so doing, shape the development of this text.

To the Student

Human Development: A Life-Span View is written with you, the student, in mind—whether you are a psychology, education, or health services major looking for practical application; a parent seeking to learn more about the way your kid(s) are growing; or simply are interested in human development. In the next few pages, we describe several features of the book that will make it easier for you to learn. Please don't skip this material; it will save you time in the long run.

Learning and Study Aids

Each chapter includes several distinctive features to help you learn the material and organize your studying.

- Each chapter opens with learning objectives, an overview of the main topics and a detailed outline.
- Each major section within a chapter begins with a set of key questions. There is also a brief vignette introducing one of the topics to be covered in that section and providing an example of the developmental issues people face.
- When key terms are introduced in the text, they appear in bold, orange type and are defined in the margin. This should make key terms easy to find and learn.
- Key developmental theories are introduced in Chapter 1 and are referred to throughout the text.
- Critical thinking questions appear in the margins. These *Think About It* questions are designed to help you make connections across sections within a chapter or across chapters.
- The end of each section includes a feature called *Test Yourself*, which will help you check your knowledge of major ideas you just read about. The Test Yourself questions serve two purposes. First, they give you a chance to spot-check your understanding of the material. Second, the questions will relate the material you have just read to other facts, theories, or the biopsychosocial framework you read about earlier.
- Text features expand or highlight a specific topic. This book includes the following features:
  - *Spotlight on Research* elaborates a specific research study discussed in the text and provides more details on the design and methods used.
  - *Diverse Perspectives: What Do* You *Think?* offers thought-provoking discussions about current issues affecting development.
  - *Linking Research to Life* focuses on how human development research is used to inform and create public policy.
  - *Real People: Applying Human Development* is a case study that illustrates how an issue in human development discussed in the chapter is manifested in the life of a real person.
- The end of each chapter includes several special study tools. A *Summary* organized by learning objective within major section headings provides a review of the key ideas in the chapter. Next is a list of *Key Terms* that appear at the end of each chapter.

We encourage you to take advantage of these learning and study aids as you read the book.

Your instructor will probably assign about one chapter per week. Don't try to read an entire chapter in one sitting. Instead, on the first day, preview the chapter. Read the introduction and notice how the chapter fits into the entire book; then page through the

chapter, reading the learning objectives, vignettes, and major headings. Also read the italicized sentences and the boldfaced terms. Your goal is to get a general overview of the entire chapter—a sense of what it's all about.

Now you're ready to begin reading. Go to the first major section and preview it again, reminding yourself of the topics covered. Then start to read. As you read, think about what you're reading. Every few paragraphs, stop briefly. Try to summarize the main ideas in your own words; ask yourself if the ideas describe your own experience or that of others you know; tell a friend about something interesting in the material. In other words, read actively—get involved in what you're reading. Don't just stare glassy-eyed at the page!

Continue this pattern—reading, summarizing, thinking—until you finish the section. Then answer the Test Yourself questions to determine how well you've learned what you've read. If you've followed the read-summarize-think cycle as you worked your way through the section, you should be able to answer most of the questions.

The next time you sit down to read (preferably the next day), start by reviewing the second major section. Then complete it with the read-summarize-think cycle. Repeat this procedure for all the major sections.

When you've finished the last major section, wait a day or two and then review each major section. Pay careful attention to the italicized sentences, the boldfaced terms, and the Test Yourself questions. Also, use the study aids at the end of the chapter to help you integrate the ideas in the chapters.

With this approach, it should take several 30- to 45-minute study sessions to complete each chapter. Don't be tempted to rush through an entire chapter in a single session. Research consistently shows that you learn more effectively by having daily (or nearly daily) study sessions devoted to both reviewing familiar material *and* taking on a relatively small amount of new material.

Terminology

A few words about terminology before we embark. We use certain terms that reflect commonly used references to different periods of the life span. Although you may already be familiar with the terms, we want to clarify how they will appear in this text. The following terms will refer to a specific range of ages:

Newborn: birth to 1 month
Infant: 1 month to 1 year
Toddler: 1 year to 2 years
Preschooler: 2 years to 6 years
School-age child: 6 years to 12 years
Adolescent: 12 years to 20 years
Emerging adulthood: 20 years to 29 years
Established adulthood: 30 years to 45 years
Middle-aged adult: 45 years to 60 years
Young-old adult: 60 years to 80 years
Old-old adult: 80 years and beyond

Sometimes, for the sake of variety, we will use other terms that are less tied to specific ages, such as babies, youngsters, and older adults. However, you will be able to determine the specific ages from the context.

Organization

This book is organized into four parts: Prenatal Development, Infancy, and Early Childhood; School-Age Children and Adolescents; Young and Middle Adulthood; and Late Adulthood. This organization achieves two major goals. First, it divides the life span in ways that relate to the divisions encountered in everyday life. Second, it enables us to provide a more complete account of adulthood than other books do.

Because some developmental issues pertain only to a specific point in the life span, some chapters are organized around specific ages. Overall, the text begins with conception and proceeds through childhood, adolescence, adulthood, and old age to death. But because some developmental processes unfold over longer periods of time, some of the chapters are organized around specific topics.

Part One covers prenatal development, infancy, and early childhood. Here we will see how genetic inheritance operates and how the prenatal environment affects a person's future development. During the first 2 years of life, the rate of change in both motor and perceptual arenas is amazing. How young children acquire language and begin to think about their world is as intriguing as it is rapid. Early childhood also marks the emergence of social relationships, as well as an understanding of gender roles and identity. By the end of this period, a child is reasonably proficient as a thinker, uses language in sophisticated ways, and is ready for the major transition into formal education.

Part Two covers the years from elementary school through high school. In middle childhood and adolescence, the cognitive skills formed earlier in life evolve to adult-like levels in many areas. Family and peer relationships expand. During adolescence, there is increased attention to work, and sexuality emerges. The young person begins to learn how to face difficult issues in life. By the end of this period, a person is on the verge of legal adulthood. The typical individual uses logic and has been introduced to most of the issues that adults face.

Part Three covers young adulthood and middle age. During this period, most people achieve their most advanced modes of thinking, achieve peak physical performance, form intimate relationships, start families of their own, begin and advance within their occupations, manage to balance many conflicting roles, and begin to confront aging. Over these years, many people go from breaking away from their families to having their children break away from them. Relationships with parents are redefined, and the pressures of being caught between the younger and older generations are felt. By the end of this period, most people have shifted focus from time since birth to time until death.

Part Four covers the last decades of life. The biological, physical, cognitive, and social changes associated with aging become apparent. Although many changes reflect decline, many other aspects of old age represent positive elements: wisdom, retirement, friendships, and family relationships. We conclude this section, and the text, with a discussion of the end of life. Through our consideration of death, we will gain additional insights into the meaning of life and human development.

We hope the organization and learning features of the text are helpful to you—making it easier for you to learn about human development. After all, this book tells the story of people's lives. Understanding the story is what it's all about.

Neuroscience Index

Note: Page numbers in *italics* indicate figures, tables, or illustrations.

Diversity Index

Note: Page numbers in *italics* indicate figures, tables, or illustrations.

Learning Objectives

After studying this chapter, you will be able to…

- Identify issues and biopsychosocial forces in the study of life-span development.
- Describe the theories used in the study of life-span psychology.
- Describe the scientific methods used to conduct research in life-span development.

Chapter **1**

The Study of Human Development

Jeanne Calment was one of the most important people to have ever lived. Her amazing achievement was not made in sports, government, or any other profession. When she died in 1997 at age 122 years and 164 days, she set the world record that still stands for the longest verified human life. Jeanne lived her whole life in Arles, France. She met Vincent Van Gogh and experienced the invention of the lightbulb, automobiles, airplanes, space travel, computers, and all sorts of everyday conveniences. She survived two world wars. Longevity ran in her family: her older brother, François, lived to 97, her father to 93, and her mother to 86. Jeanne was extraordinarily healthy her whole life, rarely being ill. She was also active; she learned fencing when she was 85, and she was still riding a bicycle at age 100. She lived on her own until she was 110, when she moved to a nursing home. Her life was documented in the 1995 film *Beyond 120 Years with Jeanne Calment*. Shortly before her 121st birthday, Musicdisc released *Time's Mistress*, a CD of Jeanne speaking over a background of rap and hip-hop music.

Did you ever wonder how long you will live? The people you will meet and the experiences you will have? Did you ever think about how you managed to go from being a young child to the more experienced person you are now? Or what might lie ahead over the next few years or decades? Would you like to break Jeanne Calment's longevity record? Does your ethnic background matter for your decision? The Diverse Perspectives: What Do *You* Think? feature on page 4 addresses some of these questions as well as provocative questions about radical life extension.

Georges GOBET Agence France Presse/Newscom

Jeanne Calment experienced many changes in society during her 122-year life span.

Consider your life to this point. Think of your fondest memories from childhood or the events and people who have most influenced you. Then create a scenario of what you think you might experience during the rest of your life. Put your notes in a safe place (if you store it online, don't forget your password). Then, years from now, retrieve it and see if you were right.

Thinking about your past and future experiences is the beginning of an exciting personal journey. Remember major moments or experiences you've had. What happened? Why do you think things happened the way they did? What major forces have shaped your life? How are those experiences and forces the same or different from those experienced by others?

Likewise, look ahead. What future story do you want to write? What forces will shape your life—and which of those forces can you influence?

In this course, you will have the opportunity to ask some of life's most basic questions: How did your life begin? How did you go from a single cell—about the size of the period at the end of a sentence in this text—to the fully grown, complex adult you are today? Will you be the same or different later in life? How do your race, ethnicity, gender, socioeconomic status, and other factors influence your experiences? How do you influence other people's lives? How do they influence yours? How do the various roles you have already had or may play

Diverse Perspectives: What Do ***You*** Think?

Would You Want to Live to Be 142?

Humans may be on the brink of fundamentally redefining the typical life span. *Time* magazine explored the possibility that a baby born since 2005 could live to 142 years (or longer) (*Time*, 2015). As you will learn in this book, we know much about the factors determining the length of the human life span, and we have in our grasp the ability to dramatically increase the number of years people live. But just because science enables us to think about extending life considerably, the key question is whether people will *want* to live to be 142.

Two surveys conducted by the Pew Research Center (2013a, 2016a) asked a representative sample of U.S. adults whether they would want to live decades longer, to at least 120 years, and whether they would want certain biological enhancements to do that. Interestingly, when people answered from their own perspective, 56% said they would not want to live that long. But when asked what they thought other people would do, 68% said they thought other people would choose to live to at least 120. Two-thirds said they would not want brain chip implants to boost mental functions nor synthetic blood to improve physical performance. However, half said they would want genetic editing to lower the risk of babies eventually developing diseases.

Even if we could wave a magic wand and have all of these options available, whether we could to 142 is likely to be affected by a number of diversity factors. As we will see in Chapter 14, for instance, people's likely life spans differ across racial, ethnic, gender, and socioeconomic groups because of structural inequities. So, if we wanted to give all people a reasonable chance of living to 142, we would first need to eliminate the differences across racial and ethnic groups in, for example, the financial resources needed to afford excellent health care and nutritious food.

A dramatic extension of the human life span to 120 years or more would likely raise ethical and moral questions, such as how to define a full and purpose-driven life, especially with respect to how we should handle the end of life. We consider these issues and how they differ across various groups in detail in Chapter 16.

As we move along our journey through the human life span, we will often confront questions that take us to the intersection of science, ethics, morality, personal belief, and diversity. Later in this chapter, we will encounter the rules by which scientific research is conducted, so you will better understand what the Pew Research Center did in conducting their poll. In Chapter 16, when we encounter the complex personal issues relating to the end of life, you will apply this grounding to how people use (or ignore) research findings in their own lives.

Back to the question posed here—would *you* like to live to 142? Longer? How could we provide equal opportunity to even have the choice?

What Do *You* Think?

- Do you think that most people would want to live to be 120 years of age, or even older?
- Do you think a desire to live longer than we currently do is fueled by (a) wanting to stay alive to be productive; (b) wanting to spend more time with loved ones; (c) wanting to see what the future holds beyond our own normal lives; (d) a fear of death and what, if anything, comes after our lives; or (e) some combination of these?
- What would be some of the effects of many people living such long lives?

someday—child, partner/spouse, parent, friend, worker, grandparent—shape your development? How do you deal with the thought of your own death and the deaths of others?

These are examples of the questions that create the scientific foundation of human development, *the multidisciplinary study of how people change and how they remain the same over time*. Answering these questions requires us to draw on theories and research in the physical and social sciences, including biology, genetics, neuroscience, chemistry, medicine, psychology, sociology, demography, ethnography, economics, and anthropology. The science of human development reflects the complexity and uniqueness of each person and each person's experiences as well as commonalities and patterns among people. As a science, human development is firmly grounded in theory and research as it seeks to understand human behavior.

human development
the multidisciplinary study of how people change and how they remain the same over time

Before our journey begins, we need to collect some things to make the trip more rewarding. In this chapter, we pick up the necessary global positioning system (GPS) coordinates that point us in the proper direction: a framework to organize theories and research, common issues and influences on development, and the methods developmental scientists use to make discoveries. Throughout the book, we will point out how the various theories and research connect to your own experience. Pack well and bon voyage.

1.1 Thinking About Development

Key Questions

- What are the three fundamental issues of development? What are the key aspects of each one?
- What are the basic forces in the biopsychosocial framework? What are the key aspects of each?
- What is the neuroscience perspective? What are its advantages in understanding human development?

Hassan Qabbani smiled broadly as he held his newborn grandson for the first time. So many thoughts rushed into his mind: What would Mohammad experience growing up? Would the neighborhood they lived in influence his reaching his potential? Would he inherit the family genes for good health? How would his life growing up as an Arab American in Michigan be different from Hassan's experiences in Syria?

Like many grandparents, Hassan wonders what the future holds for his grandson. The questions he asks are interesting in their own right, but they are important for another reason: They bear on general issues of human development that have intrigued philosophers and scientists for centuries. In the next few pages, we introduce some of these issues, which surface when any aspect of development is being investigated.

Recurring Issues in Human Development

What factors shaped the *you* that you are right now? You might suspect such things as your genetic heritage, your race and ethnicity, your gender, your family and friends, your neighborhood, the suddenness of some changes in your life and the gradualness

of others, and the culture(s) in which you grew up or now live. You also might have noticed that you are like some people you know—and very much unlike others. So you might suspect that everyone's life is shaped by a complex set of factors.

Your speculations capture three fundamental characteristics of human development: nature and nurture, continuity and discontinuity, and universal and context-specific development. A person's development is a blend of these characteristics; for example, some of your characteristics remain the same through life (continuity) and others change (discontinuity). Because these characteristics apply to all the topics in this book, we'll examine each one.

Nature and Nurture

Think about a particular feature that you and several people in your or a friend's family have, such as intelligence, eye color, or certain personality traits. Why is this feature so prevalent? Do you think it may be inherited? Or is it mainly because of where and how people were brought up? *Answers to these questions illustrate different positions on the* nature–nurture issue, *which involves the degree to which genetic or hereditary influences (nature) and experiential or environmental influences (nurture) determine the kind of person you are.* The key point is that development is always shaped by both: Nature and nurture are mutually interactive influences.

nature–nurture issue
the degree to which genetic or hereditary influences (nature) and experiential or environmental influences (nurture) determine the kind of person you are

For example, in Chapter 10, you will learn that one risk factor for cardiovascular disease is heredity but that lifestyle factors such as diet and smoking play important roles in determining who has heart attacks.

A major aim of human development research is to understand how heredity and environment jointly determine development. For Hassan, it means his grandson's development will surely be shaped both by the genes he inherited and by the experiences he will have.

Think About It

Think of some common, everyday behaviors such as computer gaming and playing sports with your friends. How do nature and nurture influence these behaviors?

Continuity and Discontinuity

Think of some ways in which you are still the same as you were as a 5-year-old. Maybe you were outgoing and friendly at that age and remain outgoing and friendly today. This example suggests much continuity in development. From this perspective, once a person heads down a particular developmental path—for example, toward friendliness—they tend to stay on that path throughout life, other things being equal. From a continuity perspective, if Mohammad is outgoing and friendly 5-year-old, then he should be outgoing and friendly as a 25-year-old and a 75-year-old.

The other view is that development is not always continuous. In this view, people can change from one developmental path to another and may do so several times in their lives. Consequently, Mohammad might be friendly and outgoing at age 5, outgoing but obnoxious at 25, and unfriendly and aloof at 75.

continuity–discontinuity issue
concerns whether a particular developmental phenomenon represents a smooth progression throughout the life span (continuity) or a series of abrupt shifts (discontinuity)

The continuity–discontinuity issue *concerns whether a particular developmental phenomenon represents a smooth progression throughout the life span (continuity) or a series of abrupt shifts (discontinuity).* Of course, on a day-to-day basis, behaviors often look nearly identical, or continuous. But when viewed over the course of many months or years, the same behaviors may have changed dramatically, reflecting discontinuous change. For example, your face may look nearly identical in selfies taken on successive days (continuity) but change dramatically in photos taken years apart (discontinuity).

Throughout this book, you will find examples of developmental changes that represent continuities and others that are discontinuities. For example, in Chapter 5, you will see evidence of continuity: Infants who have satisfying emotional relationships with their parents/caregivers typically become children with satisfying peer relationships. But in Chapter 15, you will see an instance of discontinuity: After spending most of adulthood trying to ensure the success of the next generation and to leave a legacy, older adults turn to evaluating their own lives in search of closure and a sense that what they have done has been worthwhile.

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The culture in which you grow up influences how you experience life.

Universal and Context-Specific Development

In some cultures, mathematical concepts are mastered in school classrooms but in others through experiential learning, such as selling goods in street markets (Kisker et al., 2012; Sleeter, 2016). This suggests that math skills can be mastered in different ways in across cultures and introduces our last issue: *The* universal and context-specific development issue *concerns whether there is one path of development or several.* Some theorists argue that despite what look like differences in development, there is only one fundamental developmental process for everyone. According to this view, differences in development are simply variations on the same fundamental process in much the same way cars as different as a Fiat, a Honda, and a Lexus are all products of a car-making manufacturing process.

universal and context-specific development issue
concerns whether there is one path of development or several

The alternative view is that differences among people are not simply variations on a theme. Advocates of this view argue that human development is inextricably intertwined with the context within which it occurs. A person's development is a product of complex interaction with the environment, and that interaction is *not* fundamentally the same in all environments. Rather, each environment has its own set of unique procedures that shape development, just as the "recipes" for different cars yield vehicles as different as a MINI Cooper and a stretch limousine.

As is the case for the nature–nurture and continuity–discontinuity issues, the result is a blend; individual development reflects both universal and context-specific influences. For example, the order of development of physical skills in infancy is essentially the same in all cultures. But how those skills are focused or encouraged in daily life differs.

Putting all three issues together and using personality to illustrate, we can ask how the development of personality is shaped by interactions between heredity and environment, is continuous or discontinuous, and develops in much the same way around the world. To answer these kinds of questions, we need to look at the forces that combine to shape human development.

Basic Forces in Human Development: The Biopsychosocial Framework

When trying to explain why people develop as they do, scientists usually consider four interactive forces:

- Biological forces *that include all genetic and health-related factors that affect development.*

biological forces
all genetic and health-related factors that affect development

psychological forces
all internal perceptual, cognitive, emotional, and personality factors that affect development

sociocultural forces
interpersonal, societal, cultural, and ethnic factors that affect development

life-cycle forces
differences in how the same event affects people of different ages

biopsychosocial framework
useful way to organize the biological, psychological, and sociocultural forces on human development

- Psychological forces *that include all internal perceptual, cognitive, emotional, and personality factors that affect development.*
- Sociocultural forces *that include interpersonal, societal, cultural, and ethnic factors that affect development.*
- Life-cycle forces *that reflect differences in how the same event affects people of different ages.*

Each person is a unique combination of these forces. To see why each force is important, think about whether a mother, for example, decides to breastfeed her infant. The mother's decision will be based on biological variables (e.g., the quality and amount of milk she produces), attitudes about the virtues of breastfeeding, the influences of other people (e.g., the father, the mother's own mother, peers), and cultural traditions and societal norms about appropriate ways to feed infants. In addition, the decision will reflect the mother's age and stage of life. Only by focusing on all these forces can we have a complete view of the decision.

One useful way to organize the biological, psychological, and sociocultural forces on human development is with the biopsychosocial framework. ◗ Figure 1.1 emphasizes that each of the forces of the biopsychosocial framework interacts with the others to make up development. Let's consider the different elements of the biopsychosocial model in more detail.

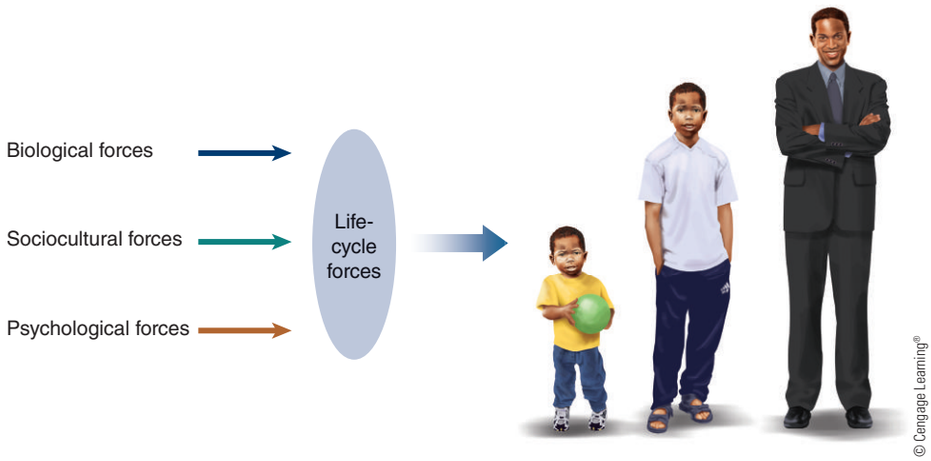
Biological Forces: Genetics and Health

Prenatal development, brain maturation, puberty, and physical aging are examples of the results of biological forces. Underlying most biological processes is our individual genetic code. For example, many children resemble their biological parents, which shows biological-genetic influences on development. But biological forces are not only genetic; they also include the effects of such things as diet and exercise. Collectively, biological forces can be viewed as providing the raw material necessary and as setting the boundary conditions (in the case of genetics) for development.

Psychological Forces: Known by Our Behavior

Psychological forces seem familiar because they are the ones used most often to describe the characteristics of a person. For example, think about how you describe yourself to others. Most of us say that we have a nice personality and are intelligent, honest, self-confident, or something similar. Concepts such as these reflect psychological forces.

In general, psychological forces are all the cognitive, emotional, personality, perceptual, and related factors that help define us as individuals and that influence behavior. Psychological forces have received the most attention of the three main developmental



◗ Figure 1.1
The biopsychosocial framework shows that human development results from interacting forces.

forces, and their impact is evident throughout this text. For example, we will learn how the development of intelligence enables individuals to experience and think about their world in different ways. We'll also learn how the emergence of self-esteem is related to the beliefs people have about their abilities, which in turn influence what they do.

Sociocultural Forces: Race, Ethnicity, Gender, and Culture

People develop in the world, not in a vacuum. To understand human development, we need to know how people and their world interact and mutually influence each other. That is, we need to view an individual's development as part of a larger system in which any individual part influences all other aspects of the system.

This larger social system includes factors that embed each of us in interpretive contexts based on certain characteristics that each society labels as important. Among the most important of these are race, ethnicity, and gender. Depending on how a society views the various categories within each of these characteristics, opportunities may be provided automatically (a "privilege" that accrues to the person) or actively withheld. Concepts such as "White privilege" and "systemic racism" are examples of how perceptions of people in various groups get translated into opportunities, barriers, and behaviors.

When social systems are considered together, we see that each person develops within a culture: the knowledge, attitudes, and behavior associated with a group of people. Culture can be linked to a particular country or people (e.g., French culture); to a specific point in time (e.g., popular culture of the early 2020s); or to groups of individuals who maintain specific, identifiable cultural traditions (e.g., Native American tribal nations, Muslims, Irish). Knowing the culture in which a person develops provides some general information about important influences that become manifest throughout the life span.

Sociocultural forces are complex, and different aspects of them interact. Intersectionality *refers to experiences that reflect unique combinations of race, gender, ability, or sexual orientation.* For example, Black women often point to experiences that are more than the sum of being a Black person *and* being a woman. Instead, their experiences are unique to being Black and female (Cillins & Bilge, 2020).

intersectionality
interaction of, for example, race and gender that results in unique life experiences beyond what might otherwise be predicted based on each aspect separately

Sociocultural forces provide the basis for the aspects of diversity that are often used to define us. Understanding the impact of diversity is particularly important in the United States, one of the most culturally diverse countries. Hundreds of different languages are spoken, and in many states, no single racial or ethnic group constitutes a majority. The many customs of people from different cultures offer insights into the broad spectrum of human experience and attest to the diversity of the U.S. population.

To be sure, the influence of culture can reflect barriers to success. As a result, social movements often arise to confront those barriers and create change. The rapid rise of the Black Lives Matter (BLM) movement is an example of how centuries of discriminatory treatment of Black individuals can become a global movement for justice. Although BLM began in 2013, it became a unifying global movement in 2020 following the murder of George Floyd. As a result, BLM became a potent example of a sociocultural force that has already influenced human behavior and development.

Social movements such as Black Lives Matter reflect the power of sociocultural forces.

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Although the U.S. population is changing rapidly, much of the research we describe in this text was conducted mainly on middle-class European Americans. Accordingly, we must be careful *not* to assume that findings from this group necessarily apply to people in other groups. Indeed, we desperately need research that includes diverse groups. Perhaps as a result of taking this course, you will help fill this need by becoming a developmental researcher yourself.

Life-Cycle Forces: Timing Is Everything

Consider the following two people during the coronavirus pandemic. Coretta, an 84-year old widow, lives in an assisted living facility due to suffering a fall in which she broke her hip.

Coretta contracted COVID-19 during an outbreak at the facility, and died from complications a few weeks later. Mon'iq, a 23-year-old, lives in an apartment complex near Coretta. She became frustrated during the stay-at-home period and was thrilled to join all her friends at a party as soon as she could. Soon after, Mon'iq tested positive for COVID-19, but had no symptoms and had very few disruptions in her routine.

Although both Coretta and Mon'iq contracted COVID-19, each of their situations, such as age and predisposing conditions, illustrates life-cycle forces: The same event can have different effects depending on when it happens in a person's life, and how individual characteristics are affected differently.

The Forces Interact

Each of the four forces in the biopsychosocial framework mutually shapes the others. The COVID-19 pandemic is an excellent example.

At the biological level, the human body has no natural defenses against a novel virus, which is why the coronavirus that causes COVID-19 proved so deadly and the work to discover an effective vaccine was so important. Psychologically, fear of COVID-19 changed people's behaviors (e.g., staying at home, maintaining social distance). Sociocultural forces were evident through increased vulnerability of people without access to quality health care and those from certain racial and ethnic backgrounds who have little, if any, access to quality health care (see Chapter 10). As illustrated in the previous section, the point in one's life span when COVID-19 was contracted mattered a great deal, illustrating life-cycle forces. How did these forces interact? Consider how wearing a face covering, an act that protected both the wearer and others (reflecting biological and psychological forces), became enmeshed with political beliefs and behavior (sociocultural forces), or how younger, asymptomatic individuals who gathered without masks and who did not practice physical distancing often infected older, more vulnerable people (life-cycle forces).

This example illustrates that no aspect of human development can be fully understood by examining the forces in isolation. All four must be considered in interaction. In fact, we'll see later in this chapter that integration across the major forces of the biopsychosocial framework is one criterion by which the adequacy of a developmental theory can be judged.

Combining the four developmental forces gives a view of human development that encompasses the life span yet appreciates the unique aspects of each phase of life. From this perspective we can view each life story as a complex interplay among the four forces. Try this for yourself. Read the short biography of Ellis Marsalis, Jr. in the Real People: Applying Human Development feature on page 11, then think about how each of the developmental forces would explain how he accomplished as much as he did and help account for why he died from COVID-19 in 2020.

Neuroscience: A Window into Human Development

Understanding that the four developmental forces interact is one thing. But what if, like the comic book heroes Olga Mesmer and Superman, you had superpower X-ray vision and could actually *see* these forces interact? That's what is possible in the field of neuroscience. *Applied to human development,* neuroscience *is the study of the brain and the nervous system, especially in terms of brain–behavior relations.* Neuroscientists use several methods to do this, from molecular analyses of individual brain cells to sophisticated techniques that yield images of brain activity.

neuroscience
the study of the brain and the nervous system, especially in terms of brain–behavior relationships

Neuroscientific approaches are being applied to a wide range of issues in human development, especially those involving memory, reasoning, and emotion (e.g., Vernooij & Barkhof, 2018; Vernooij & van Buchem, 2020; Weis et al., 2019). For example, neuroscientists are unlocking relations between developmental changes in specific regions of the brain to explain well-known developmental phenomena such

Real People: Applying Human Development

Ellis Marsalis, Jr.

Few musicians throughout history had stature and influence that would rival that of Ellis Marsalis, Jr. (1934–2020). Consider these facts (Limbong, 2020; Russonello & Levenson, 2020). Ellis was one of the greatest jazz pianists of his generation. He led a major revival of jazz in the late 20th century. He shepherded four of his sons (Branford, Delfeayo, Jason, and Wynton) into major musical careers and prominence of their own. He was a renowned teacher at the New Orleans Center for Creative Arts, the University of New Orleans, and Xavier University of Louisiana, where he influenced countless other musicians, including Terence Blanchard, Donald Harrison Jr., Harry Connick Jr., and Nicholas Payton. Sadly, he died of pneumonia complications from COVID-19 in 2020 at the age of 85.

Ellis was a devotee of mid-20th century bebop and its offshoots, rather than the traditional New Orleans style of an earlier jazz. He gained widespread praise for his playing and compositions, but it was especially through his teaching and mentoring that he created his greatest legacy. In fact, Ellis and his musical sons were the first family to be awarded the Jazz Master designation in 2011, the highest award in the profession; they were considered the First Family of Jazz.

Eillis's life exemplifies the major developmental forces. From a biological perspective, he had the genetic predisposition for music and the creativity he needed to succeed. His contracting the coronavirus at the end of his life also shows how the immune system may have difficulty fighting an unknown pathogen, especially later in life. From a psychological forces perspective, his skill in teaching music students was legendary. His vast knowledge of jazz musical styles that he acquired over his lifetime provided a basis for guiding his students. As an African American who lived his life in New Orleans, he experienced the sociocultural forces in many ways throughout his life. For instance, Ellis was born into the Jim Crow south and faced widespread discrimination, and his final illness reflects the disparate impact of the coronavirus pandemic on African Americans, in large part to systemic racism that has made quality health care difficult, and often impossible, to obtain (see Chapter 10). Combined with the life cycle forces of COVID-19's more serious impact on older adults, Ellis's life also shows the powerful interactions among developmental forces (e.g., disparate health impacts [sociocultural forces] and age [life-cycle forces]).

ZUMA Press Inc./Alamy Stock Photo

Ellis Marsalis, Jr.

as adolescents' tendency to engage in risky behavior and older adults' short-term memory problems.

We will be drawing on neuroscience research throughout this text to explain how patterns of brain activity reveal interactions among biological, psychological, sociocultural, and life-cycle forces, providing a better understanding of how each person is a unique expression of these forces.

Test Yourself 1.1

Remember and Understand

1. The nature–nurture issue involves the degree to which _____ and the environment influence human development.
2. Azar remarked that 14-year-old Ali has been incredibly shy ever since infancy. This illustrates the _____ of development.
3. _____ forces include genetic and health factors.
4. Neuroscience examines _____ relations.

Apply

- How does your life experience reflect the four developmental forces?

Create

- How does the biopsychosocial framework provide insight into the recurring issues of development (nature–nurture, continuity–discontinuity, universal–context-specific)?

Check your answers to the Remember and Understand Questions at the end of the chapter.

1.2 Developmental Theories

Key Questions

- What is meant by a developmental theory?
- What are the major aspects of psychodynamic theories of development?
- What are the major versions of learning theories of development? What are the major aspects of each?
- What are the main points in theories of cognitive development?
- What are the main points in the ecological and systems approach to human development?
- What are the main points of life-span and life-course perspectives of human development?

Marcus has just graduated from high school, first in his class. For his proud mother, Bettina, this is a time to reflect on her son's past and to ponder his future. Marcus has always been a happy, easygoing child—a joy to rear. And he's been interested in learning for as long as she can remember. Bettina 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 Late Show with Stephen Colbert.*

theory
an organized set of ideas that explains development

To answer Bettina's questions about Marcus' growth, developmental researchers need to provide a theory of development. Theories are essential because they explain what happens during development. What is a theory? *In human development, a* theory *is an organized set of ideas that explains development.* For example, suppose your friends have a baby who cries often. You could give several explanations for the crying. Maybe the baby cries because of hunger; maybe the baby cries to get held; maybe the baby cries due to being cranky and tired. Each of these explanations is a very simple theory: It tries to explain why the baby cries so much. Theories in human development are more complicated, but the purpose is the same—to explain behavior and development.

There are no truly comprehensive theories of human development to guide research (Lerner, 2018). Instead, five general perspectives influence current research: psychodynamic theory; learning theory; cognitive theory; ecological and systems theory; and theories involving the life-span perspective, selective optimization with compensation, and the life-course perspective.

Psychodynamic Theory

psychodynamic theories
hold that development is largely determined by how well people resolve conflicts they face at different ages

Psychodynamic theories *hold that development is largely determined by how well people resolve conflicts they face at different ages.* This perspective traces its roots to Sigmund Freud's (1856–1939) theory that personality emerges from conflicts that children experience between what they want to do and what society wants them to do.

Building on Sigmund Freud's ideas, Erik Erikson (1902–1994) proposed his psychosocial theory, the oldest comprehensive life-span theoretical framework that still provides an important foundation for research and theory in adult development.

Erikson's Theory

psychosocial theory
Erikson theory that personality development is determined by the interaction of an internal maturational plan and external societal demands

In his psychosocial theory, *Erikson proposed that personality development is determined by an internal maturational plan interacting with external societal demands.* He proposed that the life cycle includes eight stages, the order of which is biologically fixed (the eight stages are shown in ◗ Table 1.1). The name of each stage reflects the challenge people face. For example, the challenge for young adults is to become involved in a loving relationship. Challenges are met through a combination

Table 1.1

The Eight Stages of Psychosocial Development in Erikson's Theory

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

of inner psychological influences and outer social influences. When challenges are met successfully, people are well prepared to meet the challenge of the next stage.

The sequence of stages in Erikson's theory is based on the epigenetic principle, *which means that each psychosocial strength has its own special period of particular importance.* It takes a lifetime to acquire all of the psychosocial strengths, and later stages are built on the foundation laid in previous stages.

epigenetic principle
means by which each psychosocial strength has its own special period of particular importance

The psychodynamic perspective emphasizes that the trek to adulthood is difficult. Outcomes of development reflect the manner by which people successfully deal with (or fail to deal with) life's challenges. When children overcome early obstacles, for example, they are better able to handle the later ones. A psychodynamic theorist would tell Bettina that Marcus' cheerful disposition and academic record suggest that Marcus handled life's early obstacles well, which is a good sign for future development.

Learning Theory

In contrast to psychodynamic theory, learning theory emphasizes the experience of behaviors being rewarded or punished, and that people learn by watching others around them. Two influential learning theories are behaviorism and social learning theory.

Behaviorism

Early in the 20th century, John Watson (1878–1958) believed that learning alone determines what people become because infants' minds were essentially "blank slates." In Watson's view, experience was all that mattered in determining the course of development.

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 likelihood of the behavior that it follows.* Positive reinforcement consists of giving a reward such as chocolate, awards, or paychecks to increase the likelihood of a behavior. Parents who want to encourage their children to help with chores may reinforce them with praise, food treats, or money whenever they clean their room. Negative reinforcement consists of rewarding people by taking away unpleasant things. The same parents could use negative reinforcement by saying that whenever their children clean their room, they don't have to wash the dishes or weed the garden.

operant conditioning
technique in which the consequences of a behavior determine whether a behavior is repeated in the future

reinforcement
a consequence that increases the likelihood of the behavior that it follows

punishment
a consequence that decreases the likelihood of the behavior that it follows

A punishment *is a consequence that decreases the likelihood of the behavior that it follows.* Punishment suppresses a behavior either by adding something aversive

Think About It

How could you use the basic ideas of operant conditioning to explain how children tend to dress like their friends?

or by withholding a pleasant event. Should the children fail to clean their room, the parents may punish them by nagging (adding something aversive) or by taking away their smartphone (withholding a pleasant event).

Skinner's research was done primarily with animals, but human development researchers showed that the principles of operant conditioning extended readily to people, too (Baer & Wolf, 1968). Applied properly, reinforcement and punishment are powerful influences on everyone; however, reinforcement tends to result in quicker and longer-lasting learning than does punishment.

Social Learning Theory

imitation or observational learning
learning by simply watching those around us

People sometimes learn without reinforcement or punishment. *People learn by simply watching those around them, which is known as* imitation or observational learning. Imitation is why one toddler throws a toy after seeing another toddler do so or why a school-age child offers to help someone carry groceries because the child has seen others do the same.

People do not always imitate what they see around them. They are more likely to imitate if the person they see is important, popular, smart, or talented (think Cristiano Ronaldo or Beyoncé). They're also more likely to imitate when the behavior they see is rewarded than when it is punished. Findings like these show that people are not mechanically copying what they see and hear; instead, they look to others for information about appropriate behavior. When peers are reinforced for behaving in a particular way, this encourages imitation. This is one explanation for why groups of friends, even as adults, tend to dress, talk, and think similarly.

Albert Bandura (1925–2021) based social cognitive theory on this more complex view of reward, punishment, and imitation. Bandura's theory is "cognitive" because the theory states people actively try 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.

self-efficacy
people's beliefs about their own abilities and talents

Bandura also argues that experience gives people a sense of self-efficacy, *which refers to people's beliefs about their own abilities and talents.* Self-efficacy beliefs help determine when people will imitate others. A child who sees themself as not athletically talented, for example, will not try to imitate LeBron James dunking a basketball despite the fact that LeBron is obviously talented and known worldwide. Thus, whether an individual imitates others depends on who the other person is, on whether that person's behavior is rewarded, and on the individual's beliefs about their abilities.

Bandura's social cognitive theory is a far cry from Skinner's operant conditioning. The operant conditioned person who responds mechanically to reinforcement and punishment becomes the social cognitive person who actively interprets these and other events. Nevertheless, Skinner, Bandura, and all learning theorists share the view that experience propels people along their developmental journeys. These theorists would tell Bettina that she can thank experience for making Marcus both happy and successful academically.

Wearing similar clothing styles is an example of how imitation works within social learning theory.

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Cognitive-Developmental Theory

Another way to approach development is to focus on how people think and construct knowledge. In cognitive-developmental theory, the key is how people's thinking changes over time. Three distinct approaches have developed.

One approach postulates that thinking develops in a universal sequence of stages. The second approach proposes that people process information as computers do, becoming more efficient over much of the life span. The third approach emphasizes the contributions of culture on thinking and cognitive growth.

Piaget's Theory

The cognitive-developmental perspective began with a focus on how children construct knowledge and how their constructions change over time. Jean Piaget (1896–1980), the most influential child and adolescent developmental psychologist of the 20th century, proposed the best known of these theories.

Piaget believed that children naturally try to understand their physical and social worlds. 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?"

As children try to comprehend their world, Piaget believed that they act like scientists, creating theories about the physical and social worlds that are tested daily by experience. As with real scientific theories, when the predicted events occur, a person's belief in their theory grows stronger. When the predicted events do not occur, the person must revise their theory.

For example, imagine an infant whose theory of objects includes the idea that "Toys pushed off the table fall to the floor." If the infant pushes some other object—a plate or an article of clothing—and finds that it, too, falls to the floor, they can make the theory more general: "Objects pushed off the table fall to the floor."

Piaget also believed that children shift the ways in which they construct knowledge at a few critical points. When this happens, the way they construct their knowledge changes radically. These changes are so fundamental that the revised personal theory is, in many respects, brand new. Piaget claimed that these changes occur first at about age 2 years, again at about age 7, and a third time just before adolescence. These changes mean people go through several distinct stages in cognitive development. Each stage represents a fundamental change in how they understand and organize their environment, and each stage is characterized by more sophisticated types of reasoning. For example, the first or *sensorimotor* stage begins at birth and lasts until about 2 years of age. As the name implies, sensorimotor thinking refers to an infant's constructing knowledge through sensory and motor skills. This stage and the later stages are shown in ◗ Table 1.2.

Table 1.2

Knowledge Construction Theory 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, uses mental representation
Preoperational thought	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 their perspective
Concrete operational thought	7 years to early adolescence	Child understands and applies logical operations to experiences provided they are focused on the here and now
Formal operational thought	Adolescence and beyond	Adolescent or adult thinks abstractly, deals with hypothetical situations, and speculates about what may be possible
Prereflective reasoning	Early adulthood and beyond	Knowledge gained from trusted other and what is known is considered absolutely correct
Quasi-reflective reasoning	Mid-20s and beyond	Knowledge is uncertain; judgments are viewed as situationally determined and idiosyncratic
Reflective reasoning	Midlife and beyond	Decisions based on best evidence available that are valid; decisions open to revision based on new evidence