HUMAN DEVELOPMENT

A Life-Span View

7TH EDITION

ROBERT V. KAIL • JOHN C. CAVANAUGH

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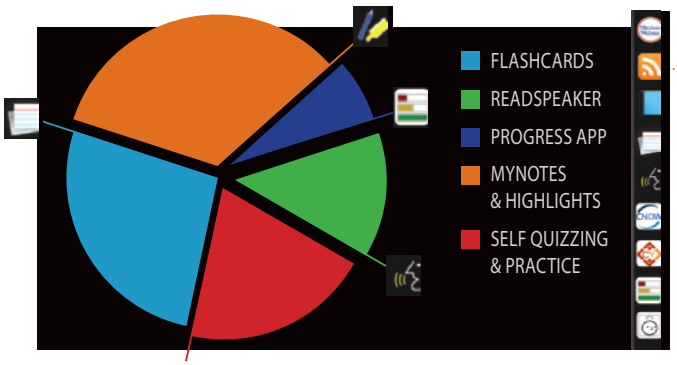

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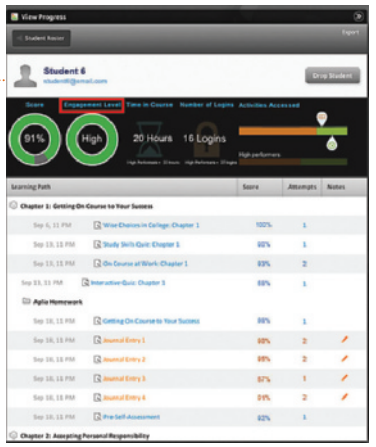

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Human Development

A Life-Span View 7E

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Robert V. Kail and John C. Cavanaugh

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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, Seventh 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 in the course of development. *Human Development: A Life-Span View, Seventh 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

The great debate among authors and instructors in the field of human development is 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 their merits. We have chosen a modified chronological approach that we believe combines the best aspects of both. The overall organization of the text is chronological: We trace development from conception through late life in sequential order and dedicate several chapters to topical issues pertaining to particular points in the life span (such as infancy and early childhood, adolescence, young adulthood, middle adulthood, and late life).

But 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, Seventh Edition*, and similar texts is that this book provides a much richer and more complete description of adult development and aging. Following the introductory chapter, the

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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 a recognition 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, Seventh 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 rich 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 Seventh Edition

The seventh 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: The Study of Human Development

- Neuroscience emphasis increased.
- New introductory feature on longevity in What Do *You* Think? feature.
- New *Real People* box on Nelson Mandela.

Chapter 2: Biological Foundations

- Extensively revised material on molecular genetics
- New material about methylation as an epigenetic mechanism
- New material on environmental pollutants
- Updated section on the impact of cocaine
- Revised material on the impact of epidural analgesia
- New Spotlight on Research feature on links between maternal depression and children's behavior

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Chapter 3: Tools For Exploring The World

- New material on ways to encourage children to eat healthy
- New Spotlight on Research feature on infants' grasping
- Much revised coverage of face perception

Chapter 4: The Emergence of Thought and Language

- Added material about ways to improve young children's attention
- New material on two number systems in infancy
- New Spotlight on Research feature on why exposure to parents' speech increases children's vocabulary
- Much revised coverage of bilingualism

Chapter 5: Entering the Social World

- New material on children's interactions with pets
- New material on influence of oxytocin on children's prosocial behavior
- New Spotlight on Research feature on reasoning about gender-related properties
- New material on gender differences in memory and effortful control
- New material on the "pink frilly dress" phenomenon with little girls

Chapter 6: Off to School

- New material on how students can be taught to use strategies
- New Spotlight on Research feature on making tests less threatening
- Much revised coverage of gifted children

Chapter 7: Expanding Social Horizons

- New material on two forms of parental control: behavioral vs psychological
- New material on genetic influences on parenting
- New material on teaching parenting skills
- Much reorganized coverage of adopted children
- Much revised description of youth's use of computers

Chapter 8: Rites of Passage

- Much revised coverage of the impact of timing of maturation on adolescents
- Much revised coverage of obesity
- New Spotlight on Research feature on programs for treating eating disorders

Chapter 9: Moving into the Adult Social World

- New material on links between executive functioning and aggressive behavior
- Revised coverage of dating abuse, including new Spotlight on Research feature on programs to reduce dating abuse

Chapter 10: Becoming an Adult: Physical, Cognitive, and Personality Development in Young Adulthood

- New Real People feature about Ella Maria Yelich-O'Connor (better known as Lorde)
- New What Do *You* Think feature about health care disparities in the United States

Chapter 11: Being with Others: Forming Relationships in Young and Middle Adulthood

- New Real People about a lesbian's experiences
- Significantly revised section on friendship
- Added discussion of hookup culture
- Updated discussion about ethnic diversity and family

Chapter 12: Work, Leisure, and Retirement

- New What Do *You* Think about the concept of women "leaning in"
- Revised section on occupational choice and career development
- New section on occupational expectations

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Chapter 13: Making It in Midlife: The Biopsychosocial Challenges of Middle Adulthood

- New Spotlight on Research about designing software for middle-aged and older nonexperts
- Added discussion about mindfulness-based stress reduction
- Added discussion about midlife correction as part of personality development

Chapter 14: The Personal Context of Later Life: Physical, Cognitive, and Mental Health Issues

- Revised and restructured section on biological theories of aging
- New discussion of advances in the treatment of cerebrovascular accidents (strokes)
- Revised section on chronic disease and health issues that includes discussion of diabetes
- Expanded discussion of neuroimaging research and cognition
- Restructured section on dementia
- Fuller discussion of research on the genetics and biomarkers of Alzheimer's disease
- New discussion of chronic traumatic encephalopathy

Chapter 15: Social Aspects of Later Life: Psychosocial, Retirement, Relationship, and Societal Issues

- New Real People feature about Pete Seeger
- New What Do *You* Think feature that includes both Social Security and Medicare
- Restructured discussion of social involvement and successful aging
- Revised section on employment and volunteering in retirement
- Restructured discussion of friends, siblings, and socioemotional selectivity
- Revised discussion of Social Security and Medicare

Chapter 16: Dying and Bereavement

- New What Do *You* Think feature about Marlise Muñoz
- New Real People feature about Randy Pausch's Last Lecture
- New Spotlight on Research about the costs of holding in grief for the sake of one's partner
- New discussion of the accuracy of diagnosing persistent vegetative state
- New, restructured section on end-of-life issues providing more focus on them

Special Features

Three 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 box appears in nearly every chapter. The three features are:

Spotlight ON RESEARCH These features emphasize a fuller understanding of the science and scope of life-span development.

What Do YOU Think? These features ask students to think critically about social and developmental issues.

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, Seventh Edition,* is its exceptional integration of pedagogical features, designed to help students maximize their learning.

- *Integration of Features.* One of the first things you may notice in paging through this text is that the three special features described earlier, which are normally set apart in boxes in other texts (boxes that students often skip!), are integrated

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directly into the narrative. This *unrivaled* integration is meant to help the student stay focused on a seamless presentation of human development across the life span.

- *Section-by-Section Pedagogy*. Each major section (every chapter has four or five) has been carefully crafted: It opens with a set of learning objectives, 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 table of contents and concludes with a bulleted, detailed *Summary* (broken down by learning objective 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 the student all the tools she or he needs to comprehend the material and study for tests.

MindTap

MindTap for *Human Development: A Life-Span View* engages and empowers students to produce their best work—consistently. By seamlessly integrating course material with videos, activities, apps, and much more, MindTap creates a unique learning path that fosters increased comprehension and efficiency.

For students:

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

Additionally, for instructors, MindTap allows you to:

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

In addition to the benefits of the platform, MindTap for *Human Development: A Life-Span View* includes:

- Formative assessments at the conclusion of each chapter.
- Interactive activities drawn from the "What Do *You* Think?" and "Real People" text features that foster student participation through polls, photo shares, and discussion threads.
- Illustrative video embedded in the MindTap Reader to highlight key concepts for the students.
- Investigate Development enables students to observe, evaluate, and make decisions about human development so they see the implications of research on a personal level. Students interact with simulated case studies of milestones in a

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person's development, observing and analyzing audio-visual 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

Cengage Learning Testing, powered by Cognero Instant Access (ISBN-13: 978-1-305-50186-7) Cognero is a flexible, online system that allows you to author, edit, and manage test bank content as well as create multiple test versions in an instant. You can deliver tests from your school's learning management system, your classroom, or wherever you want.

Online Instructor's Manual (ISBN-13: 978-1-305-50648-0) The Instructor's Manual (IM) contains a variety of resources to aid instructors in preparing and presenting text material in a manner that meets their personal preferences and course needs. It presents chapter-by-chapter suggestions and resources to enhance and facilitate learning.

Online PowerPoint® (ISBN-13: 978-1-305-50649-7) These vibrant Microsoft® PowerPoint® lecture slides for each chapter assist you with your lecture by providing concept coverage using images, figures, and tables directly from the textbook.

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.

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To the Student

Human Development is written with you, the student, in mind. 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 an overview of the main topics and a detailed outline.
- Each major section within a chapter begins with a set of learning objectives. 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, purple 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 that expand or highlight a specific topic are integrated with the rest of the material. This book includes the following three features:
  - *Spotlight on Research* elaborates a specific research study discussed in the text and provides more details on the design and methods used.
  - *What Do* You *Think?* offers thought-provoking discussions about current issues affecting development.
  - *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 in the chapter.

We strongly encourage you to take advantage of these learning and study aids as you read the book. We have also left room in the margins for you to make notes to yourself on the material, so you can more easily integrate the text with your class and lecture material.

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.

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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. Certain terms will be used to refer to different periods of the life span. Although you may already be familiar with the terms, we would like to clarify how they will be used 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

Young adult: 20 years to 40 years

Middle-age adult: 40 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

Authors of textbooks on human development always face the problem of deciding how to organize the material into meaningful segments across the life span. 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. We believe 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

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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 two 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 re-defined, 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, and understanding the story is what it's all about.

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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 1996 at age 122 years and 164 days, she set the world record for the longest verified human life span. Jeanne lived her whole life in Arles, France. During her lifetime, 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 the age of 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.

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Georges GOBET Agence France Presse/Newscom

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

Did you ever wonder what your life span will be? 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 in your future over the next few years or decades? Would you like to live to be as old as Jeanne Calment? What do you think other people would say? The What Do *You* Think? feature provides the results of a poll of Americans, as well as provocative questions about radical life extension.

What Do YOU Think? Would You Want to Live to Be 120?

The May 2013 issue of *National Geographic* magazine showed a baby with the caption "This baby will live to be 120." As you will learn in this book, our knowledge of the factors determining the length of the human life span is extensive, and we have in our grasp the ability to dramatically lengthen the number of years people live. But just because science now enables us to think about radical life extension, the key question is whether people will *want* to live to be 120.

The Pew Research Center (2013a) asked a representative sample of 2,012 U.S. adults whether they would want to live decades longer, to at least 120 years. 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. We will take a closer look at other aspects of this poll in later chapters, but in general, the results showed that people are optimistic about their own aging and the scientific advances that will enable them to enjoy a higher quality of life in old age.

A dramatic extension of the human life span to 120 years or more would likely raise ethical and moral questions, especially with respect to how we should handle the end of life. For questions such as these, many people turn to religious leaders for guidance. As part of their survey research project, the Pew Research Center (2013b) also looked at how 18 major American religious groups might approach this issue. Because no major religious group in America has taken a formal position on radical life extension, Pew researchers looked at what bioethicists (people who focus on ethics within health areas, for instance), clergy, and other scholars have said about how their respective traditions might approach the matter.

The Pew report contains links to related writings in the various religious traditions that, as you might imagine, vary across denomination. Buddhists may see longer life as providing more opportunities to learn wisdom and compassion and to achieve nirvana. Catholics may see longer lives as diminishing the search for the transcendent. Hindus may welcome longer life, as their normal blessing is "Live long." Muslims and Jews may view longer life as a reflection of God's plan for humanity. For many Protestants, the key factor would be whether longer life spans are seen as a way to avoid death, which would likely lead them to oppose it. These different views reflect different perspectives that result from the interpretation of both individual and collective experiences that are influenced in turn by various biological, psychological, and sociocultural forces (explored later in this chapter).

As we move along our journey through the human life span, questions that take us to the intersection of science and personal belief will occur frequently. Later in this chapter, we will encounter the rules by which scientific research is conducted, so you will have a better understanding of 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 have a thorough grounding in how people use (or ignore) research findings in their own lives.

Back to the question posed here—would *you* like to live to 120? What do *you* think?

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Consider your life to this point. Make a note to yourself about—or share with someone else—your fondest memories from childhood or the events and people who have most influenced you. Also make a note about what you think you might experience during the rest of your life. (Then many years from now, retrieve it and see if you were right.)

Thinking about your past experiences is the beginning of an exciting personal journey. Think about major moments or experiences you've had. What happened? Why do you think things happened the way they did? What major forces shaped that event and have shaped your life?

Likewise, looking ahead to what your future may hold is also exciting. Think about the forces that may shape the course of your life years from now. Think about the differences between those forces that you can influence and those that you cannot. Think about how the changes you experience will, in turn, affect your future.

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 person you are today? Will you be the same or different later in life? How do you influence other people's lives? How do they influence yours? How do the various roles you play throughout life—child, teenager, partner, spouse, parent, worker, grandparent—shape your development? How do you deal with the thought of your own death and the death 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, allied health and 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 road maps 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

LEARNING OBJECTIVES

- What fundamental issues of development have scholars addressed throughout history?
- What are the basic forces in the biopsychosocial framework? How does the timing of these forces affect their impact?
- How does neuroscience enhance our understanding of human development?

Javier Suarez smiled broadly as he held his newborn grandson for the first time. So many thoughts rushed into his mind: What would Ricardo experience growing up? Would the poor neighborhood they lived in prevent him from reaching his potential? Would he inherit the family genes for good health? How would his life growing up as a Latino in the United States be different from Javier's experiences in Mexico?

Like many grandparents, Javier wonders what the future holds for his grandson. The questions he asks are interesting in their own right, but they are important for another

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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 family or 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 (and they from you). 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, let's examine each one.

Nature and Nurture

Think for a minute about a particular feature that you and several people in your family have, such as intelligence, good looks, or a friendly and outgoing personality. Why is this feature so prevalent? Did you inherit it from your parents and they from your grandparents? Or is it mainly because of where and how you and your parents 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 2, you will see that some individuals inherit a disease that leads to mental retardation if they eat dairy products. However, if their environment contains no dairy products, they develop normal intelligence. Similarly, 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.

THINK About It

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

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

Continuity and Discontinuity

Think of some ways in which you remain similar to how you were as a 5-year-old. Maybe you were outgoing and friendly at that age and remain outgoing and friendly today. Examples such as these suggest a great deal of continuity in development. Once a person begins down a particular developmental path—for example, toward friendliness or intelligence—he or she tends to stay on that path throughout life, other things being equal. From a continuity perspective, if Ricardo is a friendly and smart 5-year-old, then he should be friendly and smart as a 25-year-old and a 75-year-old.

The other view—that development is not always continuous—is illustrated in the Hi and Lois cartoon. Sweet and cooperative Trixie has become assertive and demanding. In this view, people can change from one developmental path to another and perhaps several times in their lives. Consequently, Ricardo might be smart and friendly at age 5, smart but obnoxious at 25, and wise but aloof at 75.

continuity–discontinuity issue
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*

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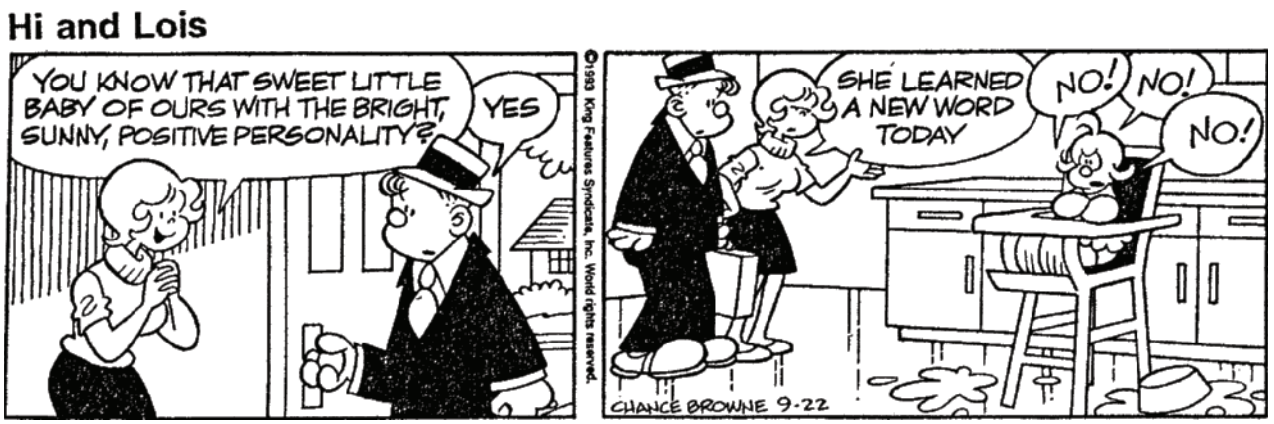

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series of abrupt shifts (discontinuity). Of course, on a day-to-day basis, behaviors often look nearly identical, or continuous. But when viewed over the course of many months or years, the same behaviors may have changed dramatically, reflecting discontinuous change. 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 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.

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

Universal and Context-Specific Development

In many native and indigenous cultures, mathematical concepts are mastered by young children not through formal education about numbers but in the context of real-life tasks such as picking berries and selling goods in street markets (Kisker et al., 2012). In contrast, 10- to 12-year-olds in the United States are formally taught at home or school to identify numbers and to perform the arithmetic needed to handle these tasks.

Can one theory explain development in both groups of children? *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 a fundamental developmental process in much the same way cars as different as a Chevrolet, a Honda, and a Lexus are all products of fundamentally the same manufacturing process.

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. 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 Smart car and a stretch limousine.

As is the case for the nature–nurture and continuity–discontinuity issues, the end result is a blend; individual development reflects both universal and context-specific influences. For example, the basic order

Even with little formal education, this Brazilian boy has well-developed mathematical skills, an example of cultural contextual forces on development.

Mathias T. Oppersdorff/Science Source

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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 across cultures.

Putting all three issues together and using personality to illustrate, we can ask how heredity and environment interact to influence the development of personality, whether the development of personality is continuous or discontinuous, and whether personality 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.*
- ***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 decides to breast-feed her infant. Her decision will be based on biological variables (e.g., the quality and amount of milk she produces), her attitudes about the virtues of breast-feeding, the influences of other people (e.g., the father), and her cultural traditions about appropriate ways to feed infants. In addition, her decision will reflect her age and stage of life. Only by focusing on all of these forces can we have a complete view of the mother's decision.

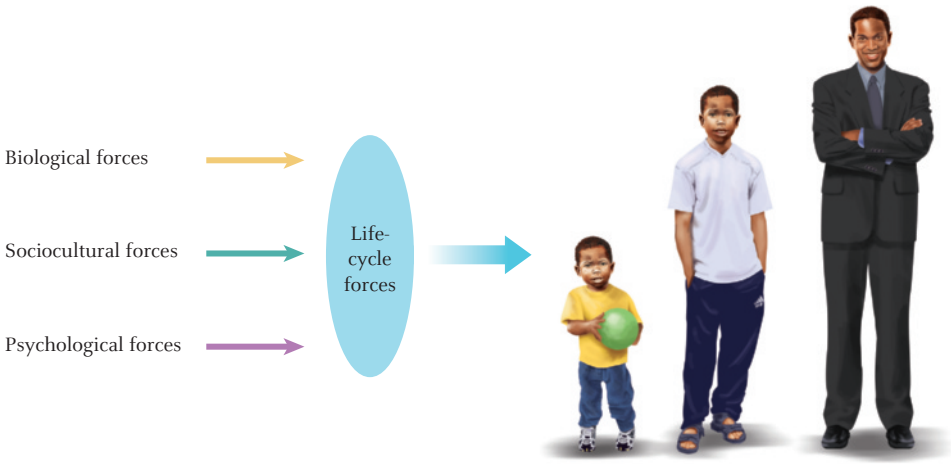
biopsychosocial framework
a useful way to organize the biological, psychological, and sociocultural forces on human development

One useful way to organize the biological, psychological, and sociocultural forces on human development is with the **biopsychosocial framework**. As you can see in ■ Figure 1.1, the biopsychosocial framework emphasizes that each of the forces interacts with the others to make up development. Let's look at the different elements of the biopsychosocial model in more detail.

Biological Forces: Genetics and Health

Prenatal development, brain maturation, puberty, and menopause may occur to you as outcomes of biological forces. Indeed, major aspects of each process are determined by our genetic code. For example, many children resemble their parents, which shows

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



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biological influences on development. But biological forces also include the effects of lifestyle factors such 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 internal cognitive, emotional, personality, perceptual, and related factors that influence behavior. Psychological forces have received the most attention of the three main developmental forces. Much of what we discuss throughout this text reflects psychological forces. For example, we will see how the development of intelligence enables individuals to experience and think about their world in different ways. We'll also see 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, and Culture

People develop in the world, not in a vacuum. To understand human development, we need to know how people and their environments interact and relate to each other. That is, we need to view an individual's development as part of a much larger system in which no individual part acts without influencing all other aspects of the system. This larger system includes one's parents, children, and siblings as well as important individuals outside the family, such as friends, teachers, and coworkers. The system also includes institutions that influence development, such as schools, television, and the workplace. At a broader level, the society in which a person grows up plays a key role.

All of these people and institutions fit together to form a person's 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 2000s); or to groups of individuals who maintain specific, identifiable cultural traditions (e.g., African Americans, Latinos). Knowing the culture from which a person comes provides some general information about important influences that become manifest throughout the life span.

Understanding the impact of culture is particularly important in the United States, one of the most culturally diverse countries in the world. Hundreds of different languages are spoken, and in many states, no 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.

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

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Although the U.S. population is changing rapidly, much of the research we describe in this text was conducted 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, there is a great need for research on different cultural groups. Perhaps as a result of taking this course, you will help fill this need by becoming a developmental researcher yourself.

Another practical problem that we face is how to describe racial and ethnic groups. Terminology changes over time. For example, the terms *colored people*, *Negroes*, *black Americans*, and *African Americans* have all been used to describe Americans of African ancestry. In this book, we use the term *African American*

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