Life-Span

Human Development 9e

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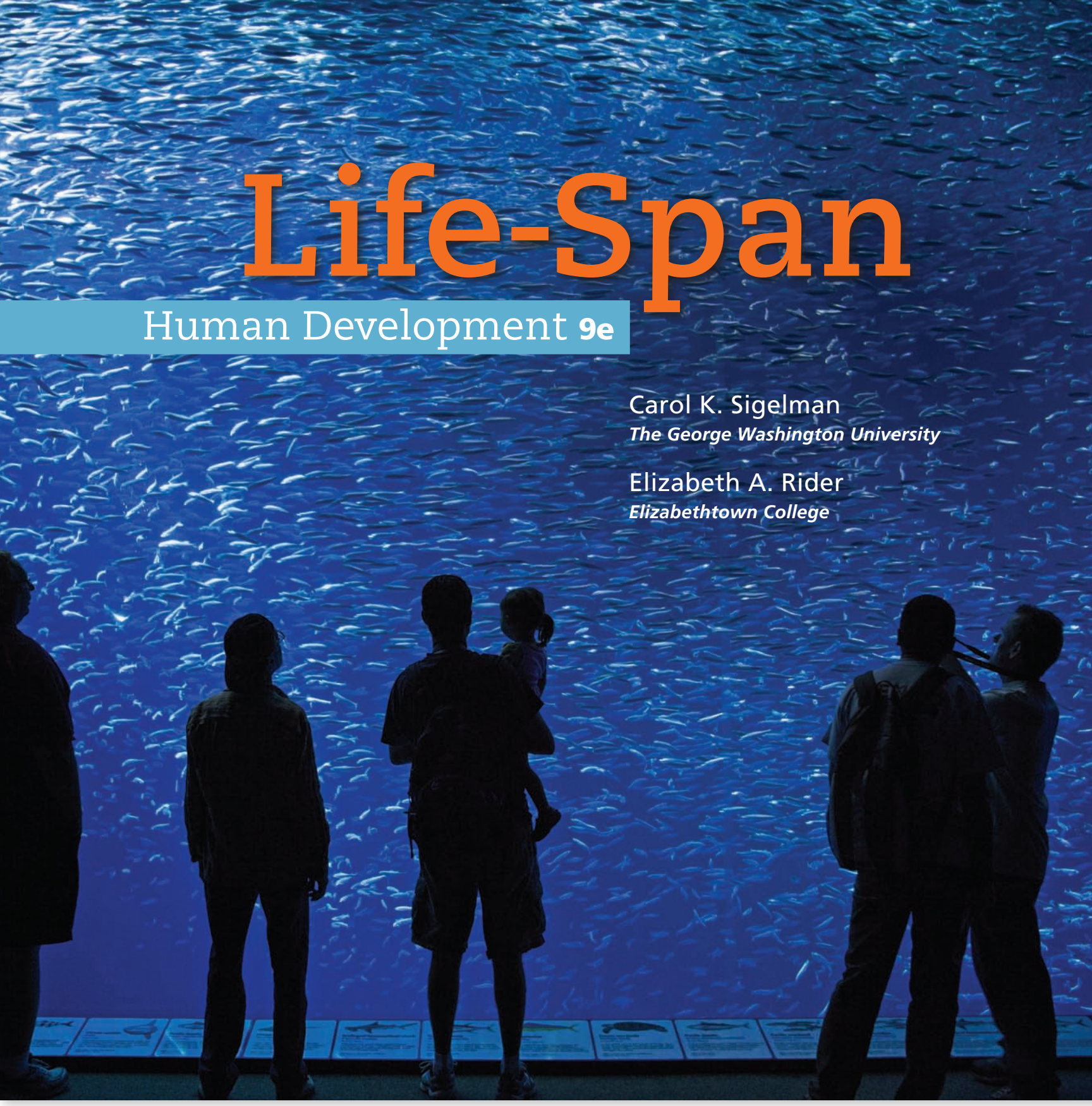

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Dedication

To the students who have inspired us

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Preface

This book is about the development of human beings—from their start as fertilized eggs to their dying days. It explores regularities as well as differences in development, and it asks fundamental questions about why we humans develop as we do. This ninth edition of *Life-Span Human Development* retains four core features valued by students and instructors over the years: (1) our unique integrated topical-chronological approach, (2) a presentation that is both research-based and relevant to students, (3) an emphasis on ideas—on the different theoretical perspectives that guide thinking about human development and research, and (4) an in-depth exploration of the all-important nature–nurture issue. In addition, we introduce exciting new topics and controversies in life-span human development, update coverage throughout, and offer new pedagogical features and supplements to enhance the teaching-learning process.

Topical and Chronological Approach

The most distinctive feature of this book is its unique integrated topical-chronological approach. Almost all other life-span development textbooks adopt a chronological or "age-stage" approach, carving the life span into age ranges and describing the prominent characteristics of individuals within each age range. In contrast, we adopt a topical approach for the overall organization of the book blended with a chronological approach within chapters. Each chapter focuses on a domain of development, such as cognition, personality, or social relationships, and traces developmental trends and influences in that domain from infancy to old age. At the same time, each chapter highlights the special qualities of different age groups through major sections on infancy, childhood, adolescence, and adulthood.

Why Topical?

Why have we fought the tide? Like many other instructors, we have typically favored topically organized textbooks when teaching child, adolescent, or adult development. As a result, it seemed natural to extend that same topical approach to the whole life span. It also bothered us that chronologically organized texts often have to repeat themselves to remind readers of where development left off in an earlier age period that was covered much earlier in the book.

More important, a topic-by-topic organization conveys the flow of development in each area—the systematic, and often dramatic, transformations we undergo as well as the ways in which we continue to be the same individuals. The topical approach also helps us emphasize the processes behind development. Finally, a topical approach captures the spirit of a life-span perspective on development: It encourages us—indeed obliges us—to view each period of life in relation to what comes before and what comes after. In chronologically organized textbooks, many topics are taken up only in connection with the age group to which they seem most relevant and are then dropped. A topical organization stimulates us to ask intriguing questions we might otherwise not ask, such as these about close relationships:

- What do infants' attachments to their parents have in common with, and how do they differ from, attachments between childhood friends or between adult romantic partners?
- Do securely attached infants later have a greater capacity to form and sustain close relationships than infants whose early social experiences are less favorable?
- What are the consequences at different points in the life span of lacking a close relationship?

Attachments are important throughout the life span and evolve over the life span; a topical organization helps make that clear.

Why Chronological?

We also appreciate the strengths of the chronological approach, particularly its ability to portray the whole person in each period of the life span. For this reason, we integrated the age-stage approach with the topical organization, aiming to have the best of both worlds.

Each topical chapter contains major sections on infancy, childhood, adolescence, and adulthood. These age-stage sections call attention to the distinctive qualities of each phase of life and make it easier for students to find material on an age period of particular interest to them. In short, we believe that our integrated topical-chronological approach gives students exactly what they deserve: an understanding of the flow of life-span development in particular areas and the factors influencing it along with an appreciation of the flavor of each developmental period.

Adaptability of the Integrated Topical-Chronological Approach

Even though links across chapters are noted throughout the book, instructors who are teaching condensed courses or who are otherwise pressed for time can omit a chapter without fear of rendering other chapters incomprehensible. For example:

- A cognitively oriented course might omit one or more of the socially oriented chapters (Chapters 11, 12, 14, 15, 16, and 17).

- A socially oriented course might omit one or more of the cognitively oriented chapters (Chapters 6, 7, 8, 9, and 10).

Moreover, this approach gives instructors the flexibility to cover infancy, childhood, and adolescence in the first portion of the course, if they prefer, and to save the material on adulthood for the end.

Research-Oriented and Relevant Coverage

We have worked hard to create a text that is rigorous yet readable—research-oriented yet "real" to students. The ninth edition of *Life-Span Human Development* tackles complex theoretical controversies and presents both classic and contemporary research from multiple disciplines. We aim to make developmental science accessible and relevant to students' lives and career goals but we do not "dumb it down."

Students need to understand how we know what we know about development—to appreciate the research process. With that in mind, we describe illustrative studies and present data in graphs and tables, and we cite the authors and dates of publication for a large number of books and articles, all fully referenced in the bibliography at the end of the book. Some students may wonder why they are there. It is because we are committed to the value of systematic research, because we are bound to give credit where credit is due, and because we want students and their professors to have the resources they need to pursue their interest in a topic during and after the course.

We also appreciate that solid scholarship is of little good to students unless they want to read it, can understand it, and see its relevance. To make the material more "real," we clarify developmental concepts through examples, analogies, and visuals; we connect topics in the text to topics in the news, and highlight the practical implications of research findings. This book contains a wealth of applied material relevant to students' current and future roles as parents, teachers, psychologists, health professionals, and other human service professionals. It helps students see that major theories of human development do not just guide researchers but can guide them—for example, in raising, educating, or treating infants, children, or adolescents, understanding themselves and making important life decisions, appreciating that their parents and grandparents are also developing persons, and coping with developmental challenges.

Theoretical Grounding

Theories are critical in any science, guiding scientists on what to study, how to study it, and how to interpret their findings. We want students to leave the study of life-span human development with more than facts alone; we want them to appreciate the major issues of interest to developmental scientists and how the leading theories in the field have shaped our thinking about development. Most important, we want students to learn to use these theoretical perspectives to guide their thinking and action when they encounter a question about human development outside the course.

With this in mind, we have devoted Chapter 2 to laying out in broad strokes the psychoanalytic, learning, cognitive developmental, and systems perspectives on human development. In later chapters, we draw on these and other perspectives as we explore different aspects of development; see, for example, treatment of the dynamic systems view of motor development in Chapter 6; Jean Piaget's groundbreaking cognitive-developmental theory in comparison to Lev Vygotsky's sociocultural perspective and Kurt Fischer's dynamic skill theory in Chapter 7; the information-processing perspective in Chapter 8; alternative views of intelligence in Chapter 9; nativist, learning, and interactionist theories of language development in Chapter 10; alternative theories of personality development in Chapter 11; theories of gender identity in chapter 12; theories of moral development, including evolutionary theory, in Chapter 13; attachment theory in Chapter 14; and family systems theory in Chapter 15.

Nature–Nurture Theme

Finally, we want students to gain a deeper understanding of the nature–nurture issue and of the many interacting forces affecting the developing person. We want students to appreciate that human development is an incredibly complex process that grows out of transactions between a changing person and a changing world and out of dynamic relationships among biological, psychological, and social influences. No contributor to development—a gene, a temperament, a parent, a culture—acts alone and is unaffected by other influences on development.

We introduce the nature–nurture issue in Chapter 1, compare theorists' stands on the issue in Chapter 2, and give the issue extended treatment in Chapter 3 on genes and environment. Each subsequent chapter includes one or more illustrations of the intertwined contributions of nature and nurture to development and aging, and Chapter 16 looks at their roles in the development of psychological disorders. Along the way, we describe exciting studies that bring home what it means to say that genes and environment interact to influence development—as when genes predisposing an individual to depression combine with stressful life events to produce depression. We also illustrate the many ways in which genes and environment affect one another—for instance, ways in which genetic makeup influences the experiences an individual has, and ways in which experience can affect the activation or expression of genes in ways that alter development.

In this edition, we have tried to convey how much more today's developmental scientists know about the intricacies of nature and nurture. We have incorporated new discoveries about genes, hormones, neural networks, and other biological forces in development. We have also strengthened coverage of contextual influences on development—ways in which developmental pathways can differ, sometimes dramatically, depending on the individual's family, school, neighborhood, social class, and subcultural

and cultural contexts. Most important, we illuminate the interplay between biological and environmental influences that is at the heart of the developmental process—and that makes it difficult to leave this course as either an extreme nativist or an extreme environmentalist.

Organization of the Text

Core Concepts: Chapters 1 to 4

The book begins by orienting students to the life-span perspective on human development and to approaches to the scientific study of development (Chapter 1), as well as to the central issues and theoretical perspectives that have dominated the field (Chapter 2). Next it explores developmental processes in some depth, examining genetic and environmental influences on development (Chapter 3) and then focusing on important environmental influences during the critical prenatal and perinatal periods (Chapter 4).

Development of Basic Human Capacities: Chapters 5 to 10

Chapters on the growth and aging of the body and nervous system and on health (Chapter 5) and on the development of sensory, perceptual, and motor capacities (Chapter 6) launch our examination of the development of basic human capacities. Chapter 7 turns to cognitive development, starting with the influential theory of Jean Piaget and then moving on to Vygotsky's and Fischer's perspectives; Chapter 8 views memory and problem solving from an information-processing perspective; Chapter 9 highlights the psychometric approach to cognition, exploring individual differences in intelligence and creativity; and Chapter 10 explores language development and the roles of language, cognition, and motivation in educational achievement.

Development of Self in Society: Chapters 11 to 17

The next three chapters concern the development of the self: changes in self-conceptions and personality and their relationships to vocational identity and development (Chapter 11); in gender roles and sexuality (Chapter 12); and in social cognition, morality, and prosocial and antisocial behavior (Chapter 13). The self is set more squarely in a social context as we trace life-span changes in attachment relationships (Chapter 14) and in roles and relationships within the family (Chapter 15). Finally, we offer a life-span perspective on developmental problems and disorders (Chapter 16) and examine how humans of different ages cope with dying and bereavement (Chapter 17).

Getting the Big Picture

To help students pull together the "big picture" of life-span human development at the end of the course, we remind students of some of the major themes of the book at the end of Chapter 17 and offer a chart inside the back cover that summarizes major developments in each of seven periods of the life span. Finally, an appendix, Careers in Human Development, lays out possibilities for translating an interest in human development into a career in research, teaching, or professional practice.

Engaging Students

The ninth edition provides learning objectives for each major numbered section and continues to use a variety of other strategies to increase students' engagement with the material and, more importantly, their learning.

Learning Objectives

Each major numbered section starts with two to five learning objectives to focus students' reading and give it purpose.

Checking Mastery Questions

To encourage students to actively check their command of the material as they progress through the chapter, we pose two to four Checking Mastery questions at the end of each numbered chapter section. Instructors can find the answers in the *Instructor's Manual* and can decide whether they want to use the questions as assignments or test items or give the answers to students so that they can test their own mastery.

Making Connections Questions

Also at the end of each major section, Making Connections questions invite students to reflect on the material—to weigh in on a debate in the field, evaluate the material's implications for public policy, apply the material to a case example, or explore the material's relevance to their own development. These questions can serve as the basis for writing assignments, essay questions, or class discussions.

Boxes

The topics we address in boxes sprinkled throughout the chapters were chosen because they struck us as both interesting and important; they are not fluff to be skipped! This edition continues to include three kinds of boxes, each with a different purpose:

- **Exploration boxes** allow more in-depth investigation of research or thinking on a topic.
- **Application boxes** examine how knowledge has been applied to optimize development.
- **Engagement boxes** provide opportunities for students to engage personally and actively with the material—to assess their own knowledge, beliefs, traits, and attitudes by completing personality scales, test items, surveys, and short quizzes.

To see the titles of these boxes, scan the table of contents.

Content Updates in This Edition

As always, the book has been thoroughly updated to convey the most recent discoveries and insights developmental scientists have to offer. We have added some exciting new topics and revised and updated coverage of many other topics for this edition. A few examples:

Chapter 1. Understanding Life-Span Human Development

- New illustrations of how the digital age may be affecting development
- Discussion of the criticism that most psychological research is about "WEIRD people" (such as American college students) who are not representative of people around the globe—and a call for understanding development in its cultural context

Chapter 2. Theories of Human Development

- Application of each major theoretical perspective to understanding and changing sexual risk behavior in adolescence
- A deeper dive into Bronfenbrenner's bioecological systems theory

Chapter 3. Genes, Environment, and Development

- Coverage of the differential susceptibility hypothesis and research suggesting that so-called risk genes that predispose some children to psychological problems in unsupportive environments may also help them benefit from supportive environments
- More on epigenetic effects of the environment on gene expression and examples of key findings and their implications

Chapter 4. Prenatal Development and Birth

- The latest research on fetal programming in response to the prenatal environment and its implications for later health and development
- New studies of the effects of exposure to radiation, pollution, and maternal stress on prenatal development
- A box on parenting tiny, low birth weight babies

Chapter 5. Body, Brain, and Health

- A timely discussion of sports-related concussions and brain development
- The latest on centenarians and why they live so long

Chapter 6. Sensation, Perception, and Action

- New twists in the study of how infants learn to avoid drop-offs
- Discussion of our limited capacity for multitasking
- An updated discussion of driving in later life

Chapter 7. Cognition

- Introduction of the theories of Piaget, Vygotsky, and Fischer and reminders of their themes in the chapter's survey of milestones in cognitive development
- New attempts to relate theories to classroom learning

Chapter 8. Memory and Information Processing

- Discussion of cases of amnesia to bring home the importance of memory processes in development
- More on the neural bases of memory

Chapter 9. Intelligence and Creativity

- A new report on the implications of socioeconomic status for IQ and changes in intellectual abilities with age
- Research on why even intelligent people sometimes make "dumb" decisions

Chapter 10. Language and Education

- The latest on bilingualism and its implications for cognitive development and aging
- A reworked discussion of nature and nurture in language acquisition, including a discussion of how the quantity and quality of speech to young language learners affects their progress

Chapter 11. Self and Personality

- A new box on culture and personality to supplement the chapter's contrasts of development in individualistic and collectivist cultures
- Recent multicultural research on changes in self-esteem and personality in adulthood

Chapter 12. Gender Roles and Sexuality

- An updated account of significant similarities and differences between the sexes
- A new section on transgender youth
- An exploration of sexual assaults on college campuses

Chapter 13. Social Cognition and Moral Development

- Exciting research on the roots of morality in infancy and early childhood, as illustrated by a sense of fairness, evaluation of good guys and bad guys, and a motivation to help
- A look at moral thinking in India and the role of religious and spiritual beliefs in moral thinking

Chapter 14. Emotions, Attachment, and Social Relationships

- More on the quality of adolescents' attachments to parents, friends, and romantic partners
- New coverage of dating among LGBT youth
- A box examining loneliness as a public health threat through the life span

Chapter 15. The Family

- More on the family as a system and the importance of supportive coparenting
- Research on the implications of helicopter parenting for the development of college students
- Challenges facing older adults in a rapidly changing China

Chapter 16. Developmental Psychopathology

- Highlights of the Great Smoky Mountains Study of the origin and course of psychological disorders.
- Research on identifying through brain imaging children at risk for depression and treating preschool children suffering from depression
- A new section on how adolescent problem behavior grows out of the normal developmental tasks of adolescence

Chapter 17. The Final Challenge: Death and Dying

- Coverage of the Brittany Maynard right-to-die case
- Recent research questioning findings of widespread resilience among bereaved adults
- An exploration of bereavement among partners of gay men with HIV/AIDS

Chapter Organization

The chapters of this book use a consistent format and contain the following:

- A chapter outline that orients students to what lies ahead
- A chapter opener that engages student interest
- Introductory material that lays out the plan for the chapter and introduces key concepts, theories, and issues relevant to the area of development to be explored
- Learning objectives at the start of each major numbered section
- Developmental sections (in Chapters 5–17) highlighting four developmental periods: infancy, childhood, adolescence, and adulthood
- Checking Mastery and Making Connections questions after each major section
- A Chapter Summary reviewing the chapter's main messages
- A Key Terms section listing new terms introduced in the chapter in the order in which they were introduced and with the page number on which they were introduced. Printed in blue, bold font, **key terms** are defined when they are first presented in a chapter and are included in the glossary at the end of the book.

Supplements

The ninth edition of *Life-Span Human Development* is accompanied by an outstanding array of supplements for both the instructor and the student that are intended to enrich the student's learning experience inside and outside the classroom. All the supplements have been thoroughly revised and updated. We invite instructors and students to examine and take advantage of the teaching and learning tools available.

Online Instructor's Manual

The *Instructor's Manual* contains chapter-specific outlines; a list of print, video, and online resources; and student learning objectives. The manual has a special emphasis on active learning, offering suggested student activities and projects for each chapter.

Cengage Learning Testing, Powered by Cognero®

Cengage Learning Testing Powered by Cognero® is a flexible, online system that allows you to import, edit, and manipulate content from the text's test bank or elsewhere, including your own favorite test questions; create multiple test versions in an instant; and deliver tests from your learning management system, your classroom, or wherever you want.

Online PowerPoint® Lecture Slide Decks

The *Online PowerPoint® Lecture Slides* are designed to facilitate an instructor's use of PowerPoint in lectures. Slides are provided for each chapter; they contain main concepts with figures, graphics, and tables to visually illustrate main points from the text. Slides have been designed to be easily modifiable so instructors are able to customize them with their own materials.

MindTap

MindTap for *Life-Span: Human Development* creates a unique learning path that fosters increased comprehension and efficiency of learning. It engages students and empowers them to produce their best work—consistently. In MindTap, course material is seamlessly integrated with videos, activities, apps, and more.

In MindTap, instructors can:

- Control the content. Instructors select what students see and when they see it.
- Create a unique learning path. In MindTap, your textbook is enhanced with multimedia and activities to encourage and motivate learning and retention, moving students up the learning taxonomy. Materials can be used as is or modified to match an instructor's syllabus exactly.
- Integrate their own content. Instructors can modify the MindTap Reader using their own documents or by pulling from sources like RSS feeds, YouTube videos, websites, Google docs, and more.
- Follow student progress. Powerful analytics and reports provide a snapshot of class progress, the time students spend logging into the course, and information on assignment completion to help instructors assess levels of engagement and identify problem areas.

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Reviewers

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iStockPhoto.com/BraunS/Christopher Futcher

1 Understanding Life-Span Human Development

In a middle-class neighborhood in Los Angeles, California, 8-year-old Ben's father asks him to get his jacket so they can leave the house. Ben ignores him, trying to put his feet into shoes that are already tied. Ben's father, expressing his annoyance, tells Ben again to get his jacket. Instead, Ben sits down and says, "Seriously, it's like you're always a control freak," then asking his father to untie his shoes and, that accomplished, asking his father to tie them—after getting Ben's jacket for him. After more resistance from Ben, Ben's father finally insists, "No, son, *go* get your own jacket and *you* tie your shoes and let's *go*" (Ochs & Izquierdo, 2009, p. 400). The boy finally goes for his jacket.

This sounds like pretty typical child behavior until we contrast it with the behavior of Matsigenka children in Peru. The Matsigenka live by fishing, hunting, and growing vegetables and children contribute to the work of the family and community from an early age. Thus 6-year-old Yanira, invited to travel down the Amazon with another family from her village, pulls her weight the whole time without ever being asked—stacking and carrying leaves to be used for roofing, sweeping sand off the sleeping mats, fishing for crustaceans and cleaning and boiling them to serve to the group, taking care of her own needs without prompts or help. Like other children in her culture, she probably experimented with heating her own food on the fire as a toddler—expected to learn, even if by burning herself, how to do it well. She was probably told folk stories about characters whose laziness had terrible consequences. By the age of 6 or 7, Matsigenka girls are cooking alongside their mothers while boys are hunting and fishing with their fathers.

Anthropologists Elinor Ochs and Carolina Izquierdo (2009) have been struck by these and other examples of how children in many societies of the world are far more responsible and self-sufficient far earlier in life than children in the United States are. Their observations of family life suggest that American parents, rather than expecting and counting on children to contribute to the family's work, load their children with toys and perform what in other cultures would be viewed as basic self-care tasks such as shoe tying for their children—or at least prod them at every step of the way (see Arnold, Graesch, & Ochs, 2012).

Life on the Amazon for a Matsigenka family in Peru.

Takahiro Igarashi/Image Source/Getty Images

This book is about the development of humans like Ben and Yanira—and yes, you—from conception to death. The lives of Ben and Yanira raise questions: What will be the later effects on them of their very different childhood experiences? Will Yanira grow up to be more responsible and independent as an adult than Ben because she was expected to learn self-care and responsibility to other people from an early age, or will Ben benefit from all the help and guidance his parents are providing him? How much can human development be bent this way or that depending on a person's experiences in his or her family and culture?

We address questions like these and others in this book. We tackle fundamental questions: How in the world does a single fertilized egg cell turn into a unique human being? How do genetic and environmental forces shape development? What can be done to optimize development? We also ask questions about different periods of the life span—for example, about how infants perceive the world, how preschool children think, how life events such as divorce affect an adolescent's adjustment, why some college students have more trouble than others deciding on a major, whether most adults experience a midlife crisis, and how people typically change as they age.

Do any of these questions intrigue you? Probably so, because we are all developing persons interested in ourselves and the other developing people around us. Most college students want to understand how they and those they know have been affected by their experiences, how they have changed over the years, and where they may be headed. Many students also have practical motivations for learning about human development—for example, a desire to be a good parent or to pursue a career as a psychologist, nurse, teacher, or other human services professional.

This introductory chapter lays the groundwork for the remainder of the book by addressing some basic questions: How should we think about development and the influences on it? What is the science of life-span development? How is development studied? And what are some of the special challenges in studying human development?

1.1 How Should We Think about Development?

LEARNING OBJECTIVES

- Define development, aging, and their relationship to each other.
- Explain and illustrate the role played by age grades, age norms, and the social clock in making human development different in different historical, cultural, and subcultural contexts.
- Summarize the extreme positions one can take on the "nature–nurture" issue and the position most developmental scientists today take.

We begin by asking what it means to say that humans "develop" or "age" over the life span, how we can conceptualize the life span and its cultural and historical diversity, and how we can approach the single biggest issue in the study of development, the nature–nurture issue.

Defining Development

Development can be defined as systematic changes and continuities in the individual that occur between conception and death, or from "womb to tomb." By describing developmental changes as systematic, we imply that they are orderly, patterned, and relatively enduring—not fleeting and unpredictable like mood swings. The changes can be gains, losses, or just differences from what we were like before. Development also involves continuities, ways in which we remain the same or continue to reflect our past selves.

The systematic changes and continuities of interest to students of human development fall into three broad domains:

1. **Physical development.** The growth of the body and its organs, the functioning of physiological systems including the brain, physical signs of aging, changes in motor abilities, and so on.

2. **Cognitive development.** Changes and continuities in perception, language, learning, memory, problem solving, and other mental processes.
3. **Psychosocial development.** Changes and carryover in personal and interpersonal aspects of development, such as motives, emotions, personality traits, interpersonal skills and relationships, and roles played in the family and in the larger society.

Even though developmentalists often specialize in one of these three aspects of development, they appreciate that humans are whole beings and that changes in one area affect the others. The baby who develops the ability to crawl, for example, has new opportunities to develop her mind by exploring kitchen cabinets and to hone her social skills by trailing her parents from room to room. And the older adult who joins an exercise group may not only become fitter but sharpen his cognitive skills and strengthen his social network.

How would you portray, as a line on a graph, typical changes from birth to old age? Many people picture tremendous positive gains in capacity from infancy to young adulthood, a flat line reflecting little change during early adulthood and middle age, and a steep decline of capacities in the later years. This stereotyped view of the life span is largely false, but it also has some truth in it, especially with respect to biological development. Traditionally, biologists have defined **growth** as the physical changes that occur from conception to maturity. We indeed become biologically mature and physically competent during the early part of the life span. **Biological aging** is the deterioration of organisms (including humans) that leads inevitably to their death. Biologically, then, development *does* involve growth in early life, stability in early and middle adulthood, and declines associated with now-accumulated effects of aging in later life.

Many aspects of development do not follow this "gain–stability–loss" model, however. Modern developmental scientists have come to appreciate that developmental change at any age involves both gains and losses. For example, although children gain many cognitive abilities as they get older and become more efficient at solving problems, they also become less flexible in their thinking, less open to considering unusual solutions (Gopnik, Griffiths, & Lucas, 2015). They also lose self-esteem and become more prone to depression (Gotlib & Hammen, 2002).

Nor should we associate aging only with loss: Some cognitive abilities do decline over the adult years. However, adults aged 50 and older typically score higher on vocabulary tests and on tests of mental ability that draw on a person's accumulated knowledge than young adults do (Hartshorne & Germine, 2015; Salthouse, 2012). They also sometimes show more wisdom when given social problems to ponder (Grossmann et al., 2010). Gerontologist Margaret Cruikshank (2009) conveyed the gains associated with aging this way: "Decline is thought to be the main theme of aging, and yet for many old age is a time of ripening, of becoming most ourselves" (p. 207).

In addition, people do not always improve or worsen but instead just become different than they were (as when a child who once feared loud noises comes to fear hairy monsters under the bed instead, or an adult who was worried about career success becomes more concerned about her children's futures). Development clearly means more than positive growth during infancy, childhood, and adolescence. And **aging**, as developmental scientists define it, involves more than biological aging; it refers to a range of physical, cognitive, and psychosocial changes, *positive and negative*, in the mature organism (Overton, 2010). In short, development involves gains, losses, neutral changes, and continuities in each phase of the life span, and aging is part of it.

Conceptualizing the Life Span

If you were to divide the human life span into periods, how would you do it? ● **Table 1.1** lists the periods that many of today's developmentalists regard as distinct. You will want to keep them in mind as you read this book, because we will constantly be speaking of infants, preschoolers, school-age children, adolescents, emerging adults, and young, middle-aged, and older adults. Note, however, that the given ages are approximate. Age is only a rough indicator of developmental status. Improvements in standards of living and health, for example, have meant that today's 65-year-olds are not as "old" physically, cognitively, or psychosocially as 65-year-olds a few decades ago were. There are also huge differences in functioning and personality among individuals of the same age; while some adults are bedridden at age 90, others are swimming laps.

The most recent addition to this list of periods of the life span—the one you may not have heard of—is **emerging adulthood**, a transitional period between adolescence and full-fledged adulthood that extends from about age 18 to age 25 and maybe as late as 29. After World War II, as jobs became more complex and required more education, more adolescents began to attend college in large numbers to prepare for work and postponed marriage and parenthood in the process (Keniston, 1970). As a result, psychologist Jeffrey Arnett and others began to describe emerging adulthood as a distinct phrase of the life span in which college-aged youth spend years getting educated and saving money in order to launch their adult lives (Arnett, 2000, 2011, 2015). Emerging adulthood is a distinct developmental period primarily in developed countries but the phenomenon is

What periods of the life span do these four females, representing four generations of the same family, fall in?

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● **Table 1.1** An Overview of Periods of the Life Span

Period of Life	Age Range
Prenatal period	Conception to birth
Infancy	First 2 years of life (the first month is the neonatal or newborn period)
Preschool period	2–5 (some prefer to describe as *toddlers* children who have begun to walk and are age 1–3)
Middle childhood	6 to about 10 (or until the onset of puberty)
Adolescence	Approximately 10–18 (or from puberty to when the individual becomes relatively independent)
Emerging adulthood	18–25 or even 29 (transitional period between adolescence and adulthood)
Early adulthood	25–40 years (adult roles are established)
Middle adulthood	40–65 years
Late adulthood	65 years and older (some break out subcategories such as the young-old, old-old, and very old based on differences in functioning)

spreading to developing ones, especially in urban areas (Arnett, 2015). According to Arnett (2004), emerging adults (maybe you?):

- explore their identities;
- lead unstable lives filled with job changes, new relationships, and moves;
- are self-focused, relatively free of obligations to others, and therefore free to focus on their own psychological needs;
- feel in between—adultlike in some ways but not others; and
- believe they have limitless possibilities ahead.

Do you believe you are truly an adult rather than an "emerging" adult? Why or why not? There are many ways to define adulthood, but sociologist Frank Furstenberg and his colleagues (2004) looked at five traditional, objective markers of adulthood: completing an education, being financially independent, leaving home, marrying, and having children. In 1960, 65% of men and 77% of women in the United States had achieved these milestones by age 30. By 2000, only 31% of men and 46% of women had achieved them by age 30.

Not everyone agrees that emerging adulthood is a truly distinct period of development (Epstein, 2013). However, it is clear that adolescents in modern societies are taking longer and longer to enter adult roles. Knowing that many youth do not yet have adult responsibilities and knowing too that brain development is not complete in our 20s, some European countries and some states in the United States are questioning the notion that 18-year-olds should be treated as adults under the law. For example, they are raising legal ages or creating special provisions to protect emerging adults from the adult criminal system (Schiraldi & Western, 2015).

Cultural Differences

● **Table 1.1** represents only one view of the periods of the life span. Age—like gender, race, and other significant human characteristics—means different things in different societies (Fry, 2009). **Culture** is often defined as the shared understandings and way of life of a people (see Mistry & Dutta, 2015; Packer & Cole, 2015). It includes beliefs, values, and practices concerning the nature of humans in different phases of the life span, what children need to be taught to function in their society, and how people should lead their lives as adults. Different cultures can lead us along different developmental pathways, as we saw in the case of Ben and Yanira, but we all participate in a culture. That culture becomes part of us, influencing how we live and how we experience our lives (Packer & Cole, 2015).

Each culture has its own ways of carving up the life span and of treating the people in different age groups. Each socially defined age group in a society—called an **age grade**—is assigned different statuses, roles, privileges, and responsibilities. Separating children into grades in school based on age is one form of age grading. Just as high schools have "elite" seniors and "lowly" freshmen, whole societies are layered into age grades.

Our society, for example, grants "adults" (18-year-olds by law in the United States) a voting privilege not granted to children. Legal definitions of the boundary between adolescence and adulthood vary, though. In most states in the United States, the legal age for marrying is lower than the legal ages for voting or serving in the military, and the right to drink alcohol is granted last, commonly at age 21 (Settersten, 2005). Similarly, although we seem to define age 65 as the boundary between middle age and old age, in fact the ages at which people become eligible for Medicare, Social Security benefits, and "senior discounts" at restaurants and stores differ.

We define old age as age 65 or older, but the !Kung San of Botswana often don't know people's chronological ages and define old age instead in terms of functioning (Rosenberg, 2009). They distinguish between the *na* or "old" (an honorary title meaning big and great granted to all older people starting at around age 50); the "old/dead" (older but still able to function); and the "old to the point of helplessness," who are ailing and need care. The St. Lawrence Eskimo simply distinguish between boys and men (or between girls and women), whereas the Arusha people of East Africa devised six socially meaningful age grades for males: youths, junior warriors, senior warriors, junior elders, senior elders, and retired elders (Keith, 1985). In certain other cultures, the recognized periods of the life span include a period before birth and an afterlife (Fry, 1985; Kojima, 2003).

Cultures differ not only in the age grades they recognize but in how they mark the transition from one age grade to another. A **rite of passage** is a ritual that marks a person's "passage" from one status to another, usually in reference to the transition from

Each January 15 in Japan, 20-year-olds are officially pronounced adults in a national celebration and enter a new age grade. Young women receive kimonos, young men receive suits, and all are reminded of their responsibilities to society. Young adults also gain the right to drink, smoke, and vote. The modern ceremony grew out of an ancient one in which young samurai became recognized as warriors (Reid, 1993). The age-grading system in Japanese culture clearly marks the beginning of adulthood with this rite of passage.

AP Photo/Shizuo Kambayashi

childhood to adulthood. Rites of passage can involve such varied practices as body painting, circumcision, beatings, instruction by elders in adult sexual practices, tests of physical prowess, and gala celebrations (see Schlegel & Barry, 2015).

Adolescent rites of passage were more common in traditional societies than they are in modern industrial societies. Yes, Jewish youth experience a clear rite of passage when they have their *bar* or *bat mitzvahs*, and 15-year-old Hispanic American girls in some communities participate in a *quinceañera* (meaning "fifteen years ceremony") to signify that they have become women. But often coming-of-age ceremonies do not have the broader meaning for the whole society that they used to have. Modern societies are more diverse than traditional societies, are not so clearly organized around distinct male and female roles, and tend to move us from childhood to adolescence and on to adulthood more gradually (Schlegel & Barry, 2015). About the clearest rite of passage to adulthood in our society, unfortunately, is a night of binge drinking at age 21. In one study, four of five college students reported that they drank on their 21st birthday to celebrate—12% of them an extremely dangerous 21 drinks (Rutledge, Park, & Sher, 2008). Perhaps because we lack a clear, society-wide rite of passage, adolescents in our society end up less sure than adolescents in many other societies of when they are adults.

Once a society has established age grades, it defines what people should and should not do at different points in the life span (Elder & Shanahan, 2006). According to pioneering gerontologist Bernice Neugarten and her colleagues (Neugarten, Moore, & Lowe, 1965), these expectations, or **age norms**, are society's way of telling people how to act their age. In our culture, for example, most people agree that 6-year-olds are too young to date or drink beer but are old enough to attend school. We also tend to agree that adults should think about marrying around age 25 (although in some segments of society earlier or later is better) and should retire around age 65 (Neugarten et al., 1965; Settersten, 1998). In less industrialized countries, age norms often call for starting work in childhood, marrying and having children in one's teens and often remaining in the family home, and stopping work earlier than 65 in response to illness and disability (Juárez & Gayer, 2014; Shanahan, 2000).

Why are age norms important? First, they influence people's decisions about how to lead their lives. They are the basis for what Neugarten (1968) called the **social clock**—a person's sense of when things should be done and when he or she is ahead of or behind the schedule dictated by age norms. Prompted by the social clock, for example, an unmarried 30-year-old may feel that he should propose to his girlfriend before she gives up on him, or a 70-year-old who loves her job may feel she should start planning for retirement. Second, age norms affect how easily people adjust to life transitions. Normal life events such as having children tend to affect us more negatively when they occur "off time" than when they occur "on time" (McLanahan & Sorensen, 1985). It can be challenging to experience puberty at either age 8 or age 18 or to become a new parent at 13 or 45. However, as Neugarten could see even in the 1960s, age norms in our society have been weakening for some time. It's less clear now what one should be doing at what age and so people do things like marry and retire at a wide range of ages (Settersten & Trauten, 2009). Witness Madonna adopting a child at 50 or Elton John becoming a first-time father at 62 (Mayer, 2011).

Subcultural Differences

Age grades, age norms, and social clocks differ not only from culture to culture but also from subculture to subculture. Our own society is diverse with respect to race and **ethnicity**, or people's affiliation with a group based on common heritage or traditions. It is also diverse with respect to **socioeconomic status (SES)**, or standing in society based on such indicators as occupational prestige, education, and income. African American, Hispanic American, Native American, Asian American, and European American individuals, and individuals of high versus low SES, sometimes have very different developmental experiences. Within these broad groups, of course, there are immense variations associated with a host of other factors. We must be careful not to overgeneralize.

To illustrate, age norms tend to differ in higher-SES and lower-SES communities: Youth from lower-income families tend to reach milestones of adulthood such as starting work, marrying, and having children earlier and to feel like adults sooner (Benson & Elder, 2011; Elder & Shanahan, 2006; Mollborn, 2009). When sociologist Linda Burton (1990, 1996, 2007) studied a low-SES African American community, she found it was common for young women to become mothers at about age 16—earlier than in most middle-class communities, white or black. Teenage mothers in this community looked to their own mothers and grandmothers to help them care for their children. Meanwhile, children were asked to grow up fast; they often tended younger siblings and helped their mothers with household tasks. Although age norms in middle-class communities in the United States call for postponing parenthood (Mollborn, 2009), it is common in cultures around the world for females to become mothers in their teens and for grandmothers

and older children to help them with child care responsibilities (Ochs & Izquierdo, 2009; Rogoff, 2003).

Perhaps the most important message about socioeconomic status is that, regardless of race and ethnicity, poverty can be very damaging to human development. About one in five children—and more like one of every three children of color—lives in poverty in the United States today, defined as an income of $24,250 for a family of four (Children's Defense Fund, 2014). Parents and children living in poverty experience more stress than higher-SES parents and children owing to noise, crowding, family disruption, hunger, exposure to violence, and other factors (Evans & Kim, 2013). Under these conditions, parents may have difficulty providing a safe, stable, stimulating, and supportive home environment for their children (Duncan, Magnuson, & Votruba-Drzal, 2015; and see Chapter 15). As a result, the developmental experiences and trajectories of children who grow up in poverty and children who grow up in affluence are significantly different. The damaging effects of poverty can be seen in measurable differences in brain development between high- and low-SES children that grow wider over the critical months of infancy and early childhood (Hanson et al., 2013) and that are linked to lower school achievement in adolescence (Mackey et al., 2015). Indeed, the negative impacts of poverty show themselves in a host of ways: not only in lower average academic achievement but in poorer mental health and well-being and even poorer physical health in adulthood (Aber, Morris, & Raver, 2012; Conger & Dogan, 2007; Evans & Kim, 2012).

Historical Changes

The nature and meanings of periods of the life span also change from one historical period to another. In Europe and North America, they have changed along these lines:

- **Childhood as an age of innocence.** Although it is not quite this simple (Stearns, 2015), it has been claimed that not until the 17th century in Western cultures did children come to be viewed as distinctly different from adults, as innocents to be protected and nurtured. In medieval Europe (A.D. 500–1500), for example, 6-year-olds were dressed in miniature versions of adult clothing, treated much like adults under the law, and expected to contribute to the family's survival as soon as possible (Ariès, 1962). Today the goal in Western families is for children to be happy and self-fulfilled rather than economically useful, as illustrated by the case of Ben at the start of the chapter (Stearns, 2015).
- **Adolescence.** Not until the late 19th century and early 20th century was **adolescence**—the transitional period between childhood and adulthood that begins with puberty and involves significant physical, cognitive, and psychosocial changes—given a name and recognized as a distinctive phase of the life span (Kett, 1977). As farming decreased and industrialization advanced, an educated labor force was needed, so laws were passed restricting child labor, making schooling compulsory, and separating youths attending school from the adult world (Furstenberg, 2000).
- **Emerging adulthood.** As you saw earlier, the transition period from adolescence to adulthood has become so long in modern societies that a new period of the life span, *emerging adulthood*, has been defined in the late 20th and early 21st centuries.

Although medieval children were pressured to abandon their childish ways as soon as possible and were dressed like miniature adults, it is doubtful that they were really viewed as miniature adults. Still, the modern concept of children as innocents to be nurtured and protected did not begin to take hold until the 17th century.

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- **Middle age as an emptying of the nest.** This distinct life phase emerged in the 20th century as parents began to bear fewer children and live long enough to see their children grow up and leave home (Moen & Wethington, 1999).
- **Old age as retirement.** Not until the 20th century did our society come to define old age as a period of retirement. In earlier eras, adults who survived to old age literally worked until they dropped. Starting in the last half of the 20th century, thanks to Social Security, pensions, Medicare, and other support programs, working adults began to retire in their 60s with many years ahead of them (Schulz & Binstock, 2006).

Projecting the Future

What will the life span look like in the future? In the early 21st century, the average **life expectancy** for a newborn in the United States—the average number of years a newborn who is born now can be expected to live—is almost 79 years, compared with 47 years in 1900 (National Center for Health Statistics, 2015). As **Figure 1.1** shows, that life expectancy is generally greater for females than for males and

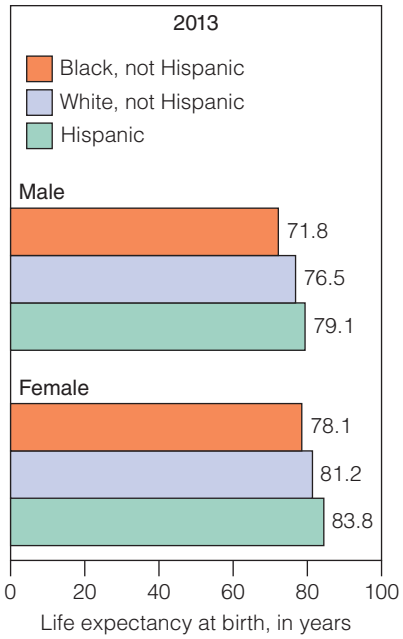

Figure 1.1 Life expectancy for non-Hispanic white, African American, and Hispanic males and females at birth in the United States.

Source: National Center for Health Statistics

is highest among Hispanic Americans, lowest among African Americans, and in-between among European Americans. In each group, wealth is associated with longer life than poverty.

To put these numbers in a global context, the average life expectancy of 79 in the United States is quite a bit lower than life expectancies in the longest-lived countries, Japan (84) and Singapore (83), but considerably higher than life expectancies in Central African Republic (51), Chad (52) and other African nations that have been hurt by widespread poverty and disease, including the HIV/AIDS epidemic (World Health Organization, 2015). By 2030, when most members of the baby boom generation will have retired, adults 65 and older will represent not the 13% of the U.S. population they represented in 2010 but over 20% (Ortman, Velkoff, & Hogan, 2014). As a result, an increasingly large group of elderly people will depend on a smaller generation of younger, working adults to support them. Although these elders will be healthier, wealthier, and better educated than the generations that preceded them, they will also need a lot of services—and health and mental health professionals trained in aging to serve them—as more of them reach very old ages (Schaie, 2011; Treas & Hill, 2009). How will policy makers address these issues? Conflict between the generations over resources and resentful attitudes toward aging adults could become problems (North & Fiske, 2012). This "graying of America," and indeed of the world's population, along with societal changes we cannot yet anticipate, will make the aging experience by the end of the 21st century different than it is today.

In sum, age—whether it is 7, 17, or 70—has had different meanings in different historical eras and most likely will mean something different in the 21st century than it did in the 20th. The broader message is clear: *We must view development in its historical, cultural, and subcultural context*. We must bear in mind that each social group settles on its own definitions of the life span, the age grades within it, and the age norms appropriate to each age range, and that each social group experiences development differently. We must also appreciate that in Western cultures it was only in the 17th century that children came to be seen as innocents; in the late 19th century that adolescence emerged as a distinct phase; and in the 20th century that our society recognized emerging adulthood, a middle-aged "empty nest" period, and an old age retirement period. One of the most fascinating challenges in the study of human development is to understand which aspects of development are universal and which differ across social and historical contexts—and why.

Framing the Nature–Nurture Issue

Understanding human development means grappling with *the* major issue in the study of human development—the **nature–nurture issue**, or the question of how biological forces and environmental forces act and interact to make us what we are (see Goldhaber, 2012). We will highlight this central and always fascinating issue throughout this book.

Nature

On the nature side of the debate are those who emphasize the influence of heredity, universal maturational processes guided by the genes, biologically based or innate predispositions produced by evolution, and biological influences on us every day of hormones, neurotransmitters, and other biochemicals. To those who emphasize nature, some aspects of development are inborn or innate, others are the product of **maturation**, the biological unfolding of the individual as sketched out in the **genes** (the hereditary material passed from parents to child at conception). Just as seeds turn into mature plants through a predictable process, humans "unfold" within the womb (assuming that they receive the necessary nourishment from

Today's older adults are healthier, wealthier, and more educated than older adults of previous generations. However, as more of them reach advanced ages, they will need more services from people trained in gerontology and geriatrics.

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