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Development Across the Life Span

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Robert S. Feldman

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Global Edition

Robert S. Feldman

University of Massachusetts, Amherst



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Preface

This book tells a story: the story of our lives, and our parents' lives, and the lives of our children. It is the story of human beings and how they get to be the way they are.

Unlike any other area of study, lifespan development speaks to us in a very personal sense. It covers the range of human existence from its beginnings at conception to its inevitable ending at death. It is a discipline that deals with ideas and concepts and theories, but one that above all has at its heart people—our fathers and mothers, our friends and acquaintances, our very selves.

Development Across the Life Span seeks to capture the discipline in a way that sparks, nurtures, and shapes readers' interest. It is meant to excite students about the field, draw them into its way of looking at the world, and build their understanding of developmental issues. By exposing readers to both the current content and the promise inherent in lifespan development, the text is designed to keep interest in the discipline alive long after students' formal study of the field has ended.

Overview of the Eighth Edition

Development Across the Life Span, Eighth Edition—like its predecessors—provides a broad overview of the field of human development. It covers the entire range of the human life, from the moment of conception through death. The text furnishes a broad, comprehensive introduction to the field, covering basic theories and research findings as well as highlighting current applications outside the laboratory. It covers the life span chronologically, encompassing the prenatal period, infancy and toddlerhood, the preschool years, middle childhood, adolescence, early and middle adulthood, and late adulthood. Within these periods, it focuses on physical, cognitive, and social and personality development.

The book seeks to accomplish the following four major goals:

- First and foremost, the book is designed to provide a broad, balanced overview of the field of lifespan development. It introduces readers to the theories, research, and applications that constitute the discipline, examining both the traditional areas of the field and more recent innovations. It pays particular attention to the applications developed by lifespan development specialists, demonstrating how lifespan developmentalists use theory, research, and applications to help solve significant social problems.

- The second goal of the text is to explicitly tie development to students' lives. Findings from the study of lifespan development have a significant degree of relevance to students, and this text illustrates how these findings can be applied in a meaningful, practical sense. Applications are presented in a contemporaneous framework, including current news items, timely world events, and contemporary uses of lifespan development that draw readers into the field. Numerous descriptive scenarios and vignettes reflect everyday situations in people's lives, explaining how they relate to the field.
- The third goal is to highlight both the commonalities and diversities of today's multicultural society. Consequently, the book incorporates material relevant to diversity in all its forms—racial, ethnic, gender, sexual orientation, religion, and cultural—throughout every chapter. In addition, every chapter has at least one *Developmental Diversity* chapter. These features explicitly consider how cultural factors relevant to development both unite and diversify our contemporary, global society.
- Finally, the fourth goal is one that is implicit in the other three: making the field of lifespan development engaging, accessible, and interesting to students. Lifespan development is a joy both to study and teach because so much of it has direct, immediate meaning to our lives. Because all of us are involved in our own developmental paths, we are tied in very personal ways to the content areas covered by the book. *Development Across the Life Span*, then, is meant to engage and nurture this interest, planting a seed that will develop and flourish throughout readers' lifetimes.

In accomplishing these goals, the book strives to be user friendly. Written in a direct, conversational voice, it duplicates as much as possible a dialogue between author and student. The text is meant to be understood and mastered on its own by students of every level of interest and motivation. To that end, it includes a variety of pedagogical features that promote mastery of the material and encourage critical thinking.

In short, the book blends and integrates theory, research, and applications, focusing on the breadth of human development. Furthermore, rather than attempting to provide a detailed historical record of the field, it focuses on the here and now, drawing on the past where appropriate, but with a view toward delineating the field as it now stands and the directions toward which it is evolving. Similarly,

while providing descriptions of classic studies, the emphasis is more on current research findings and trends.

Development Across the Life Span is meant to be a book that readers will want to keep in their own personal libraries, one that they will take off the shelf when considering problems related to that most intriguing of questions: How do people come to be the way they are?

Special Features

Chapter-Opening Prologues

Each chapter begins with a short vignette, describing an individual or situation that is relevant to the basic developmental issues being discussed in the chapter.

Looking Ahead Sections

These opening sections orientate readers to the topics to be covered, bridging the opening prologue with the remainder of the chapter.

Learning Objectives

Each major section includes explicit learning objectives. These numbered learning objectives provide a means for instructors to evaluate student mastery of specific content.

From Research to Practice

Each chapter includes a section that describes current developmental research applied to everyday problems, helping students to see the impact of developmental research throughout society. Many are new in this edition.

Developmental Diversity

Every chapter has at least one “Developmental Diversity” section incorporated into the text. These sections highlight issues relevant to today’s multicultural society.

Running Glossary

Key terms are defined in the margins of the page on which the term is presented.

Are You an Informed Consumer of Development?

Every chapter includes information on specific uses that can be derived from research conducted by developmental investigators.

Review and Journal Prompt Sections

Interspersed throughout each chapter are three short recaps of the chapter’s main points, as well as Journal Prompts designed to elicit critical thinking about the subject matter through written responses.

End-of-Chapter Material

Each chapter ends with a summary and an Epilogue that refers back to the opening Prologue and that ties the chapter together. The Looking Back summary is keyed to the chapter’s learning objectives.

Career References

Students will encounter frequent questions throughout the text designed to show the applicability of the material to a variety of professions, including education, nursing, social work, and health-care providers.

Putting It All Together

In end-of-part integrative concept maps, a short vignette is presented and students are asked to consider the vignette from both their point of view and the point of view of parents, educators, health-care workers, social workers, and so on.

What’s New in the Eighth Edition?

The revision includes a number of significant changes and additions. Most importantly, the text now includes a comprehensive list of specific, numbered learning objectives. This helps instructors to design tests focused on certain learning objectives and students to direct their study most effectively and efficiently.

In addition, every chapter begins with a new opening vignette that introduces students to the real-world implications of the chapter topic. Furthermore, almost all *From Research to Practice* boxes—which describe a contemporary developmental research topic and its applied implications—are new to this edition.

Finally, the Eighth Edition of *Development Across the Life Span* incorporates a significant amount of new and updated information. For instance, advances in such areas as behavioral genetics, brain development, evolutionary perspectives, and cross-cultural approaches to development receive expanded and new coverage. Overall, hundreds of new citations have been added, with most of those from articles and books published in the last few years.

New topics were added to every chapter. The following sample of new and revised topics featured in this edition provides a good indication of the currency of the revision:

Chapter 1

- Update on the first person conceived *in vitro*
- Control of children’s use of the Internet
- Long-term effects of war

Chapter 2

- Fetal alcohol syndrome disorder
- Update incidence of hunger
- Updated incidence of Down’s Syndrome births
- Updated incidence of Klinefelter’s syndrome
- Abortion aftereffects
- Miscarriage

New DSM terminology:

- Autism spectrum disorder
- Schizophrenia disorder spectrum disorder
- Major depression disorder
- Interpretation of birth defect probability

Chapter 3

- Advantages of infant massage
- U.S. infant mortality rate (new figure)
- Taste preferences being in utero
- Parents modify speech when talking to infants

Chapter 4

- Percentage of deaths from shaken baby syndrome
- Brain plasticity
- Sudden infant death syndrome statistics (new figure)
- Malnutrition in the United States
- Malnutrition worldwide (new figure)
- Percentage of low-income and poor families (new figure)
- Recent research on breast milk
- Infant massage associated with social development

Chapter 5

- Sucking reflex and transition to next stage
- Brain growth and infantile amnesia
- Usefulness of Bayley Scales
- Change in style of speech with foreigners

Chapter 6

- Infant emotions
- Fathers' involvement child care
- Fusiform gyrus and attention to children's faces
- "Expert" babies
- Update on families in the twenty-first century

Chapter 7

- Update on obesity in children
- Update on depressive orders in children
- Television viewing and other media use (new figure)

Chapter 8

- Play and brain development
- Autism spectrum disorder
- One-parent families

Chapter 9

- Asthma "triggers"

- Childhood-onset fluency disorder
- Specific learning disorders
- New figure on ADHD incidence rise

Chapter 10

- Dealing with bullying
- New figure on single parent households
- Gay and Lesbian parenting

Chapter 11

- Obesity and fast foods
- Sleep deprivation in adolescents
- New trends in e-cigarette use
- Changes in marijuana usage

Chapter 12

- Empathy in adolescence
- Transsexualism

Chapter 13

- International homicide rates
- Obesity
- Exercise and longevity

Chapter 14

- Gender wage gap changes
- Emerging adulthood
- Same-sex marriage

Chapter 15

- Coronary heart disease rates
- Breast cancer incidence
- Genetic screening for future illness susceptibility

Chapter 16

- Change in immigration statistics
- Relationship between perceived age and chronological age: health outcomes

Chapter 17

- Life span statistics
- Proportion of people over 60
- Risk of falling

Chapter 18

- Poverty and the elderly
- Increase in divorce among elderly
- Aging as a state of mind

Chapter 19

- Cost of funeral update
- Increasing popularity of cremation

Ancillaries

Development Across the Life Span, Eighth Edition, is accompanied by a superb set of teaching and learning material.

Print and Media Supplements for the Instructor

- **Instructor's Resource Manual.** The Instructor's Resource Manual has been thoroughly reviewed and revised for the eighth edition. It includes learning objectives, key terms and concepts, self-contained lecture suggestions, and class activities for each chapter.

The Instructor's Resource Manual will be available for download via the Pearson Instructor's Resource Center (www.pearsonglobaleditions.com) or on the MyPsychLab® platform (www.MyPsychLab.com).

- **Video Enhanced PowerPoint Slides.** These slides bring the Feldman design right into the classroom, drawing students into the lecture and providing wonderful interactive activities, visuals, and videos.
- **PowerPoint Lecture Slides.** The lecture slides provide an active format for presenting concepts from each chapter and feature prominent figures and tables from the text. The PowerPoint Lecture Slides are available for download via the Pearson Instructor's Resource Center (www.pearsonglobaleditions.com) or on the MyPsychLab® platform (www.MyPsychLab.com).
- **Test Bank.** For the eighth edition, each question was checked for accuracy to ensure that the correct answer was marked and the page reference was accurate. The test bank contains over 3,000 multiple-choice, true/false, and essay questions, each referenced to the relevant page in the book and correlated to chapter learning objectives. The test bank features the identification of each question as factual, conceptual, or applied and also makes use of Bloom's Taxonomy. Finally, each item is also identified in terms of difficulty level to allow professors to customize their tests and ensure a balance of question types. Each chapter of the test item file begins with the Total Assessment Guide: an easy-to-reference grid that makes creating tests easier by organizing the test questions by text section, question type, and whether it is factual, conceptual, or applied.
- **MyPsychLab.** Available at www.MyPsychLab.com, MyPsychLab is an online homework, tutorial, and assessment program that truly engages students in learning. It helps students better prepare for class, quizzes,

and exams—resulting in better performance in the course. It provides educators a dynamic set of tools for gauging individual and class performance:



The eighth edition includes integrated videos and media content throughout, allowing students to explore topics more deeply at the point of relevancy. This content is available on MyPsychLab.

- **Customizable.** MyPsychLab is customizable. Instructors choose what students' course looks like. Homework, applications, and more can easily be turned on and off.
- **Assignment Calendar and Gradebook.** A drag and drop assignment calendar makes assigning and completing work easy. The automatically graded assessment provides instant feedback and flows into the gradebook, which can be used in the MyPsychLab or exported.
- **Personalized Study Plan.** Students' personalized plans promote better critical thinking skills. The study plan organizes students' study needs into sections, such as Remembering, Understanding, Applying, and Analyzing.

Video Resource for Instructors

- **Pearson Teaching Films Lifespan Development Video** engages students and brings to life a wide range of topics spanning prenatal through the end of the life span. International videos shot on location allow students to observe similarities and differences in human development across various cultures.

Supplementary Texts

Contact your Pearson representative to package any of these supplementary texts with *Development Across the Life Span, Eighth Edition*.

- **Current Directions in Developmental Psychology.** Readings from the American Psychological Society. This exciting reader includes over 20 articles that have been carefully selected for the undergraduate audience, and taken from the very accessible *Current Directions*

in *Psychological Science* journal. These timely, cutting-edge articles allow instructors to bring their students a real-world perspective about today's most current and pressing issues in psychology. The journal is discounted when packaged with this text for college adoptions.

- ***Twenty Studies That Revolutionized Child Psychology by Wallace E. Dixon, Jr.*** Presenting the seminal research studies that have shaped modern developmental psychology, this brief text provides an overview of the environment that gave rise to each study, its experimental design, its findings, and its impact on current thinking in the discipline.
- ***Human Development in Multicultural Contexts: A Book of Readings.*** Written by Michele A. Paludi, this compilation of readings highlights cultural influences in developmental psychology.
- ***The Psychology Major: Careers and Strategies for Success.*** Written by Eric Landrum (Idaho State University), Stephen Davis (Emporia State University), and Terri Landrum (Idaho State University), this 160-page paperback provides valuable information on career options available to psychology majors, tips for improving academic performance, and a guide to the APA style of research reporting.

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Chapter 1

An Introduction to Lifespan Development



Learning Objectives

- LO 1.1** Define the field of lifespan development and describe what it encompasses.
- LO 1.2** Describe the areas that lifespan development specialists cover.
- LO 1.3** Describe some of the basic influences on human development.
- LO 1.4** Summarize four key issues in the field of lifespan development.
- LO 1.5** Describe how the psychodynamic perspective explains lifespan development.
- LO 1.6** Describe how the behavioral perspective explains lifespan development.
- LO 1.7** Describe how the cognitive perspective explains lifespan development.
- LO 1.8** Describe how the humanistic perspective explains lifespan development.
- LO 1.9** Describe how the contextual perspective explains lifespan development.
- LO 1.10** Describe how the evolutionary perspective explains lifespan development.
- LO 1.11** Discuss the value of applying multiple perspectives to lifespan development.
- LO 1.12** Describe the role that theories and hypotheses play in the study of development.
- LO 1.13** Compare the two major categories of lifespan development research.
- LO 1.14** Identify different types of correlational studies and their relationship to cause and effect.

LO 1.15 Explain the main features of an experiment.

LO 1.16 Distinguish between theoretical research and applied research.

LO 1.17 Compare longitudinal research, cross-sectional research, and sequential research.

LO 1.18 Describe some ethical issues that affect psychological research.

Chapter Overview

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The Cognitive Perspective: Examining the Roots of Understanding

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Prologue: New Conceptions

What if for your entire life, the image that others held of you was colored by the way in which you were conceived?

In some ways, that's what it has been like for Louise Brown, who was the world's first “test tube baby,” born by in vitro fertilization (IVF), a procedure in which fertilization of a mother's egg by a father's sperm takes place outside of the mother's body.

Louise was a preschooler when her parents told her how she was conceived, and throughout her childhood she was bombarded with questions. It became routine to explain to her classmates that she, in fact, was not born in a laboratory.

As a child, Louise sometimes felt completely alone. “I thought it was something peculiar to me,” she recalled. But as she grew older, her isolation declined as more and more children were born in the same manner.

In fact, today Louise is hardly isolated. More than 5 million babies have been born using the same procedure, which has become almost routine. And at the age of 28, Louise became a mother herself, giving birth to a baby boy named Cameron—conceived, incidentally, the old-fashioned way (Falco, 2012; ICMRT, 2012). ■

Looking Ahead

Louise Brown's conception may have been novel, but her development, from infancy, through childhood and adolescence, to her marriage and the birth of her baby, has followed a predictable pattern. The specifics of our development vary: some encounter economic deprivation or live in war-torn territories; others contend with genetic or family issues like divorce and step-parents. The broad strokes of development, however, set in motion in that test tube all those years ago, are remarkably similar for all of us. Like

LeBron James, Bill Gates, and the Queen of England, each and every one of us is traversing the territory known as lifespan development.

Louise Brown's conception in the lab is just one of the brave new worlds of the twenty-first century. Issues ranging from cloning to the consequences of poverty on development or the prevention of AIDS raise significant concerns that affect human development. Underlying these are even more fundamental issues: How do we develop physically? How does our understanding of the world grow and change throughout our lives? And how do our personalities and our social relationships develop as we move from birth through the entire span of our lives?



Louise Brown and her son.

Each of these questions, and many others we'll encounter throughout this book, are central to the field of lifespan development. As a field, lifespan development encompasses not only a broad span of time—from before birth to death—but also a wide range of areas of development. Consider, for example, the range of interests that different specialists in lifespan development focus on when considering the life of Louise Brown:

- Lifespan development researchers who investigate behavior at the level of biological processes might determine if Louise's functioning prior to birth was affected by her conception outside the womb.
- Specialists in lifespan development who study genetics might examine how the genetic endowment from Louise's parents affects her later behavior.
- For lifespan development specialists who investigate the ways thinking changes over the course of life, Louise's life might be examined in terms of how her understanding of the nature of her conception changed as she grew older.
- Researchers in lifespan development who focus on physical growth might consider whether her growth rate differed from children conceived more traditionally.
- Lifespan development experts who specialize in the social world and social relationships might look at the ways that Louise interacted with others and the kinds of friendships she developed.

Although their interests take many forms, these specialists in lifespan development share one concern: understanding the growth and change that occur during the course of life. Taking many differing approaches, developmentalists study how both the biological inheritance from our parents and the environment in which we live jointly affect our behavior.

Some developmentalists focus on explaining how our genetic background can determine not only how we look but also how we behave and relate to others in a consistent manner—that is, matters of personality. They explore ways to identify how much of our potential as human beings is provided—or limited—by heredity. Other lifespan development specialists look to the environment, exploring ways in which our lives are shaped by the world that we encounter. They investigate the extent to which we are shaped by our early environments, and how our current circumstances influence our behavior in both subtle and evident ways.

Whether they focus on heredity or environment, all developmental specialists acknowledge that neither heredity nor environment alone can account for the full range of human development and change. Instead, our understanding of people's development requires that we look at the interaction of heredity and environment, attempting to grasp how both, in the end, contribute to human behavior.

In this chapter, we orient ourselves to the field of lifespan development. We begin with a discussion of the scope of the discipline, illustrating the wide array of topics it

covers and the full range of ages, from conception to death, that it examines. We also survey the key issues and controversies of the field and consider the broad perspectives that developmentalists take. Finally, we discuss the ways developmentalists use research to ask and answer questions.

An Orientation to Lifespan Development

Have you ever wondered how it is possible that an infant tightly grips your finger with tiny, perfectly formed hands? Or marveled at how a preschooler methodically draws a picture? Or at the way an adolescent can make involved decisions about whom to invite to a party or the ethics of downloading music files? Or the way a middle-aged politician can deliver a long, flawless speech from memory? Or wondered what it is that makes a grandfather at 80 so similar to the father he was when he was 40?

If you've ever wondered about such things, you are asking the kinds of questions that scientists in the field of *lifespan development* pose. In this section, we'll examine how the field of lifespan development is defined, the scope of the field, as well as some basic influences on human development.

Defining Lifespan Development

LO 1.1 Define the field of lifespan development and describe what it encompasses.

lifespan development

the field of study that examines patterns of growth, change, and stability in behavior that occur throughout the entire life span

Lifespan development is the field of study that examines patterns of growth, change, and stability in behavior that occur throughout the entire life span. Although the definition of the field seems straightforward, the simplicity is somewhat misleading. In order to understand what development is actually about, we need to look underneath the various parts of the definition.

In its study of growth, change, and stability, lifespan development takes a *scientific* approach. Like members of other scientific disciplines, researchers in lifespan development test their assumptions about the nature and course of human development by applying scientific methods. As we'll see later in the chapter, they develop theories about development, and they use methodical, scientific techniques to validate the accuracy of their assumptions systematically.

Lifespan development focuses on *human* development. Although there are developmentalists who study the course of development in nonhuman species, the vast



How people grow and change over the course of their lives is the focus of lifespan development.

majority examine growth and change in people. Some seek to understand universal principles of development, whereas others focus on how cultural, racial, and ethnic differences affect the course of development. Still others aim to understand the unique aspects of individuals, looking at the traits and characteristics that differentiate one person from another. Regardless of approach, however, all developmentalists view development as a continuing process throughout the life span.

As developmental specialists focus on the ways people change and grow during their lives, they also consider stability in people's lives. They ask in which areas, and in what periods, people show change and growth, and when and how their behavior reveals consistency and continuity with prior behavior.

Finally, developmentalists assume that the process of development persists throughout every

part of people's lives, beginning with the moment of conception and continuing until death. Developmental specialists assume that in some ways people continue to grow and change right up to the end of their lives, while in other respects their behavior remains stable. At the same time, developmentalists believe that no particular, single period of life governs all development. Instead, they believe that every period of life contains the potential for both growth and decline in abilities and that individuals maintain the capacity for substantial growth and change throughout their lives.

The Scope of the Field of Lifespan Development

LO 1.2 Describe the areas that lifespan development specialists cover.

Clearly, the definition of lifespan development is broad and the scope of the field is extensive. Consequently, lifespan development specialists cover several quite diverse areas, and a typical developmentalist will choose to specialize in both a topical area and an age range.

TOPICAL AREAS IN LIFESPAN DEVELOPMENT. Some developmentalists focus on **physical development**, examining the ways in which the body's makeup—the brain, nervous system, muscles, and senses, and the need for food, drink, and sleep—helps determine behavior. For example, one specialist in physical development might examine the effects of malnutrition on the pace of growth in children, while another might look at how athletes' physical performance declines during adulthood (Fell & Williams, 2008; Muiños & Ballesteros, 2014).

Other developmental specialists examine **cognitive development**, seeking to understand how growth and change in intellectual capabilities influence a person's behavior. Cognitive developmentalists examine learning, memory, problem-solving skills, and intelligence. For example, specialists in cognitive development might want to see how problem-solving skills change over the course of life, or whether cultural differences exist in the way people explain their academic successes and failures. They would also be interested in how a person who experiences significant or traumatic events early in life would remember them later in life (Alibali, Phillips, & Fischer, 2009; Dumka et al., 2009; Penido et al., 2012).

Finally, some developmental specialists focus on personality and social development. **Personality development** is the study of stability and change in the enduring characteristics that differentiate one person from another over the life span. **Social development** is the way in which individuals' interactions with others and their social relationships grow, change, and remain stable over the course of life. A developmentalist interested in personality development might ask whether there are stable, enduring personality traits throughout the life span, whereas a specialist in social development might examine the effects of racism or poverty or divorce on development (Evans, Boxhill, & Pinkava, 2008; Lansford, 2009; Tine, 2014). These four major topic areas—physical, cognitive, social, and personality development—are summarized in Table 1-1.

AGE RANGES AND INDIVIDUAL DIFFERENCES. In addition to choosing to specialize in a particular topical area, developmentalists also typically look at a particular age range. The life span is usually divided into broad age ranges: the prenatal period (the period from conception to birth), infancy and toddlerhood (birth to age 3), the preschool period (ages 3 to 6), middle childhood (ages 6 to 12), adolescence (ages 12 to 20), young adulthood (ages 20 to 40), middle adulthood (ages 40 to 65), and late adulthood (age 65 to death).

It's important to keep in mind that these broad periods—which are largely accepted by lifespan developmentalists—are social constructions. A *social construction* is a shared notion of reality, one that is widely accepted but is a function of society and culture at a given time. Consequently, the age ranges within a period—and even the periods

physical development

development involving the body's physical makeup, including the brain, nervous system, muscles, and senses, and the need for food, drink, and sleep

cognitive development

development involving the ways that growth and change in intellectual capabilities influence a person's behavior

personality development

development involving the ways that the enduring characteristics that differentiate one person from another change over the life span

social development

the way in which individuals' interactions with others and their social relationships grow, change, and remain stable over the course of life

Table 1-1 Approaches to Lifespan Development

Orientation	Defining Characteristics	Examples of Question Asked*
Physical development	Emphasizes how the brain, nervous system, muscles, sensory capabilities, and needs for food, drink, and sleep affect behavior	<ul style="list-style-type: none"> • What determines the sex of a child? (2) • What are the long-term results of premature birth? (3) • What are the benefits of breast milk? (4) • What are the consequences of early or late sexual maturation? (1) • What leads to obesity in adulthood? (13) • How do adults cope with stress? (15) • What are the outward and internal signs of aging? (17) • How do we define death? (19)
Cognitive development	Emphasizes intellectual abilities, including learning, memory, problem solving, and intelligence	<ul style="list-style-type: none"> • What are the earliest memories that can be recalled from infancy? (5) • What are the intellectual consequences of watching television? (7) • Do spatial reasoning skills relate to music practice? (7) • Are there benefits to bilingualism? (9) • How does an adolescent's egocentrism affect his or her view of the world? (11) • Are there ethnic and racial differences in intelligence? (9) • How does creativity relate to intelligence? (13) • Does intelligence decline in late adulthood? (17)
Personality and social development	Emphasizes enduring characteristics that differentiate one person from another, and how interactions with others and social relationships grow and change over the lifetime	<ul style="list-style-type: none"> • Do newborns respond differently to their mothers than to others? (3) • What is the best procedure for disciplining children? (8) • When does a sense of gender identity develop? (8) • How can we promote cross-race friendships? (10) • What are the causes of adolescent suicide? (12) • How do we choose a romantic partner? (14) • Do the effects of parental divorce last into old age? (18) • Do people withdraw from others in late adulthood? (18) • What are the emotions involved in confronting death? (19)

*Numbers in parentheses indicate in which chapter the question is addressed.

themselves—are in many ways arbitrary and often culturally derived. For example, later in the book we'll discuss how the concept of childhood as a special period did not even exist during the seventeenth century; at that time, children were seen simply as miniature adults. Furthermore, while some periods have a clear-cut boundary (infancy begins with birth, the preschool period ends with entry into public school, and adolescence starts with sexual maturity), others don't.

For instance, consider the period of young adulthood, which at least in Western cultures is typically assumed to begin at age 20. That age, however, is notable only because it marks the end of the teenage period. In fact, for many people, such as those enrolled in higher education, the age change from 19 to 20 has little special significance, coming as it does in the middle of the college years. For them, more substantial changes may occur when they leave college and enter the workforce, which is more likely to happen around age 22. Furthermore, in some non-Western cultures, adulthood may be considered to start much earlier, when children whose educational opportunities are limited begin full-time work.

In fact, some developmentalists have proposed entirely new developmental periods. For instance, psychologist Jeffrey Arnett argues that adolescence extends into *emerging adulthood*, a period beginning in the late teenage years and continuing into the mid-twenties. During emerging adulthood, people are no longer adolescents, but they haven't fully taken on the responsibilities of adulthood. Instead, they are still trying out different identities and engage in self-focused exploration (Arnett, 2010, de Dios, 2012; Sumner, Burrow, & Hill, 2015).

In short, there are substantial *individual differences* in the timing of events in people's lives. In part, this is a biological fact of life: People mature at different rates and reach developmental milestones at different points. However, environmental factors also play a significant role in determining the age at which a particular event is likely to occur. For example, the typical age of marriage varies substantially from one culture to another, depending in part on the functions that marriage plays in a given culture.

It is important to keep in mind, then, that when developmental specialists discuss age ranges, they are talking about averages—the times when people, on average, reach



This wedding of two children in India is an example of how environmental factors can play a significant role in determining the age when a particular event is likely to occur.

particular milestones. Some people will reach the milestone earlier, some later, and many will reach it around the time of the average. Such variation becomes noteworthy only when children show substantial deviation from the average. For example, parents whose child begins to speak at a much later age than average might decide to have their son or daughter evaluated by a speech therapist.

THE LINKS BETWEEN TOPICS AND AGES. Each of the broad topical areas of lifespan development—physical, cognitive, social, and personality development—plays a role throughout the life span. Consequently, some developmental experts focus on physical development during the prenatal period, and others during adolescence. Some might specialize in social development during the preschool years, while others look at social relationships in late adulthood. Still others might take a broader approach, looking at cognitive development through every period of life.

In this book, we'll take a comprehensive approach, proceeding chronologically from the prenatal period through late adulthood and death. Within each period, we'll look at different topical areas: physical, cognitive, social, and personality. Furthermore, we'll also be considering the impact of culture on development, as we discuss next.

Influences on Development

LO 1.3 Describe some of the basic influences on human development.

Bob, born in 1947, is a baby boomer; he was born soon after the end of World War II, when an enormous bulge in the birth rate occurred as soldiers returned to the United States from overseas. He was an adolescent at the height of the civil rights movement and the beginning of protests against the Vietnam War. His mother, Leah, was born in 1922; she is part of the generation that passed its childhood and teenage years in the shadow of the Great Depression. Bob's son, Jon, was born in 1975. Now building a career after graduating from college and starting his own family, he is a member of what has been called Generation X. Jon's younger sister, Sarah, who was born in 1982, is part of the next generation, which sociologists have called the Millennial Generation.

These people are, in part, products of the social times in which they live. Each belongs to a particular **cohort**, a group of people born at around the same time in the same place. Such major social events as wars, economic upturns and depressions, famines, and epidemics (like the one due to the AIDS virus) work similar influences on members of a particular cohort (Mitchell, 2002; Dittmann, 2005; Twenge, Gentile, & Campbell, 2015).

cohort

a group of people born at around the same time in the same place

Cohort effects provide an example of *history-graded influences*, which are biological and environmental influences associated with a particular historical moment. For instance, people who lived in New York City during the 9/11 terrorist attack on the World Trade Center experienced shared biological and environmental challenges due to the attack (Bonanno et al., 2006; Laugharne, Janca, & Widiger, 2007; Park, Riley, & Snyder, 2012).

In contrast, *age-graded influences* are biological and environmental influences that are similar for individuals in a particular age group, regardless of when or where they are raised. For example, biological events such as puberty and menopause are universal events that occur at relatively the same time throughout all societies. Similarly, a socio-cultural event such as entry into formal education can be considered an age-graded influence because it occurs in most cultures around age six.

From an educator's perspective

How would a student's cohort membership affect his or her readiness for school? For example, what would be the benefits and drawbacks of coming from a cohort in which Internet use was routine, compared with earlier cohorts prior to the appearance of the Internet?

Development is also affected by *sociocultural-graded influences*, the social and cultural factors present at a particular time for a particular individual, depending on such variables as ethnicity, social class, and subcultural membership. For example, sociocultural-graded influences will be considerably different for children who are white and affluent than for children who are members of a minority group and living in poverty (Rose et al., 2003).

Finally, *non-normative life events* are specific, atypical events that occur in a person's life at a time when such events do not happen to most people. For example, a child whose parents die in an automobile accident when she is six years old has experienced a significant non-normative life event.

Developmental Diversity and Your Life

How Culture, Ethnicity, and Race Influence Development

Mayan mothers in Central America are certain that almost constant contact between themselves and their infant children is necessary for good parenting, and they are physically upset if contact is not possible. They are shocked when they see a North American mother lay her infant down, and they attribute the baby's crying to the poor parenting of the North American. (Morelli et al., 1992)

What are we to make of the two views of parenting expressed in this passage? Is one right and the other wrong? Probably not, if we take into consideration the cultural context in which the mothers are operating. Different cultures and subcultures have their own views of appropriate and inappropriate childrearing, just as they have different developmental goals for children (Huijbregts et al., 2009; Chen, Chen & Zheng, 2012; Eeckhaut et al., 2014).

It has become clear that in order to understand development, developmentalists must take into consideration broad cultural factors, such as an orientation toward individualism or collectivism. They must also consider finer ethnic, racial, socioeconomic, and gender differences if they are to achieve an understanding of how people change and grow throughout the life span. If developmentalists succeed in doing so, not only can they achieve a better understanding of human development, but they may be able to derive more precise applications for improving the human social condition.

Efforts to understand how diversity affects development have been hindered by difficulties in finding an appropriate vocabulary. For example, members of the research community—as well as society at large—have sometimes used terms such as *race* and *ethnic group* in inappropriate ways. *Race* is a biological concept, which should be employed to refer to classifications based on physical and structural characteristics of species. In contrast, *ethnic group* and *ethnicity* are broader terms, referring to cultural background, nationality, religion, and language.

The concept of race has proven especially problematic. Although it formally refers to biological factors, race has taken on substantially more meanings—many of them inappropriate—that range from skin color to religion to culture. Moreover, the concept of race is exceedingly imprecise; depending on how it is defined, there are between 3 and 300 races, and no race is genetically distinct. The fact that 99.9 percent of humans' genetic makeup is identical in all humans makes the question of race seem comparatively insignificant (Bamshad & Olson, 2003; Helms, Jernigan, & Mascher, 2005; Smedley & Smedley, 2005).

In addition, there is little agreement about which names best reflect different races and ethnic groups. Should the term *African American*—which has geographical and cultural implications—be preferred over *black*, which focuses primarily on skin color? Is *Native American* preferable to *Indian*? Is *Hispanic* more appropriate than *Latino*? And how can researchers accurately categorize people with multiethnic backgrounds? The choice of category has important implications for the validity and usefulness of research. The choice even has political implications. For example, the decision to permit people to identify themselves as “multiracial” on U.S. government forms and in the U.S. Census initially was highly controversial (Perlmann & Waters, 2002).

In order to fully understand development, then, we need to take the complex issues associated with human diversity into account. It is only by looking for similarities and differences among various ethnic, cultural, and racial groups that developmental researchers can distinguish principles of development that are universal from principles that are culturally determined. In the years ahead, then, it is likely that lifespan development will move from a discipline that focuses primarily on North American and European development to one that encompasses development around the globe (Fowers & Davidov, 2006; Matsumoto & Yoo, 2006; Kloep et al., 2009).

Key Issues and Questions: Determining the Nature—and Nurture—of Lifespan Development

LO 1.4 Summarize four key issues in the field of lifespan development.

Lifespan development is a decades-long journey. Though there are some shared markers along the way—such as learning to speak, going to school, and finding a job—there are, as we have just seen, many individual routes with twists and turns along the way that also influence this journey.

For developmentalists working in the field, the range and variation in lifespan development raises a number of issues and questions. What are the best ways to think about the enormous changes that a person undergoes from before birth to death? How important is chronological age? Is there a clear timetable for development? How can one begin to find common threads and patterns?

These questions have been debated since lifespan development first became established as a separate field in the late nineteenth and early twentieth centuries, though a fascination with the nature and course of human development can be traced back to the ancient Egyptians and Greeks. We will look at some of these issues, which are summarized in Table 1-2.

CONTINUOUS CHANGE VERSUS DISCONTINUOUS CHANGE. One of the primary issues challenging developmentalists is whether development proceeds in a continuous or discontinuous fashion. In **continuous change**, development is gradual, with achievements at one level building on those of previous levels. Continuous change is quantitative in nature; the basic underlying developmental processes that drive change remain the same over the course of the life span. Continuous change, then, produces changes that are a matter of degree, not of kind. Changes in height prior to adulthood, for example, are continuous. Similarly, as we'll see later in the chapter, some theorists suggest that changes in people's thinking capabilities are also continuous, showing gradual quantitative improvements rather than developing entirely new cognitive processing capabilities.

In contrast, one can view development as being made up of primarily **discontinuous change**, occurring in distinct stages. Each stage or change brings about behavior that is assumed to be qualitatively different from behavior at earlier stages. Consider the example of cognitive development again. We'll see later in the chapter that some cognitive developmentalists suggest that as we develop, our thinking changes in fundamental ways, and that such development is not just a matter of quantitative change but of qualitative change.

continuous change

gradual development in which achievements at one level build on those of previous levels

discontinuous change

development that occurs in distinct steps or stages, with each stage bringing about behavior that is assumed to be qualitatively different from behavior at earlier stages

Table 1-2 Major Issues in Lifespan Development

Continuous Change	Discontinuous Change
<ul style="list-style-type: none"> • Change is gradual. • Achievements at one level build on previous level. • Underlying developmental processes remain the same over the life span. 	<ul style="list-style-type: none"> • Change occurs in distinct steps or stages. • Behavior and processes are qualitatively different at different stages.
Critical Periods	Sensitive Periods
<ul style="list-style-type: none"> • Certain environmental stimuli are necessary for normal development. • Emphasized by early developmentalists. 	<ul style="list-style-type: none"> • People are susceptible to certain environmental stimuli, but consequences of absent stimuli are reversible. • Current emphasis in lifespan development.
Lifespan Approach	Focus on Particular Periods
<ul style="list-style-type: none"> • Current theories emphasize growth and change throughout life, relatedness of different periods. 	<ul style="list-style-type: none"> • Infancy and adolescence emphasized by early developmentalists as most important periods.
Nature (Genetic Factors)	Nurture (Environmental Factors)
<ul style="list-style-type: none"> • Emphasis is on discovering inherited genetic traits and abilities. 	<ul style="list-style-type: none"> • Emphasis is on environmental influences that affect a person's development.

Most developmentalists agree that taking an either/or position on the continuous–discontinuous issue is inappropriate. While many types of developmental change are continuous, others are clearly discontinuous.

CRITICAL AND SENSITIVE PERIODS: GAUGING THE IMPACT OF ENVIRONMENTAL EVENTS. If a woman comes down with a case of rubella (German measles) in the first twenty weeks of pregnancy, the consequences for the child she is carrying are likely to be devastating: They include the potential for blindness, deafness, and heart defects. However, if she comes down with the exact same strain of rubella in the thirtieth week of pregnancy, damage to the child is unlikely.

The differing outcomes of the disease in the two periods demonstrate the concept of critical periods. A **critical period** is a specific time during development when a particular event has its greatest consequences. Critical periods occur when the presence of certain kinds of environmental stimuli is necessary for development to proceed normally (Uylings, 2006).

Although early specialists in lifespan development placed great emphasis on the importance of critical periods, more recent thinking suggests that in many realms, individuals are more malleable than was first thought, particularly in the domain of personality and social development. For instance, rather than suffering permanent damage from a lack of certain kinds of early social experiences, there is increasing evidence that people can use later experiences to their benefit, to help them overcome earlier deficits.

Consequently, developmentalists are now more likely to speak of sensitive periods rather than critical periods. In a **sensitive period**, organisms are particularly susceptible to certain kinds of stimuli in their environment. A sensitive period represents the optimal period for particular capacities to emerge, and children are particularly sensitive to environmental influences.

It is important to understand the difference between the concepts of critical periods and sensitive periods. In critical periods, it is assumed that the absence of certain kinds of environmental influences is likely to produce permanent, irreversible consequences for the developing individual. In contrast, although the absence of particular environmental influences during a sensitive period may hinder development, it is possible for later experiences to overcome the earlier deficits. In other words, the concept of sensitive period recognizes the plasticity of developing humans (Armstrong, et al., 2006; Hooks & Chen, 2008; Hartley & Lee, 2015).

LIFESPAN APPROACHES VERSUS A FOCUS ON PARTICULAR PERIODS. On which part of the life span should developmentalists focus their attention? For early developmentalists, the answers tended to be infancy and adolescence. Most attention was clearly concentrated on those two periods, largely to the exclusion of other parts of the life span.

Today, the story is different. Developmentalists now believe that the entire life span is important, for several reasons. One is the discovery that developmental growth and change continue during every part of life—as we’ll discuss throughout this book.

Furthermore, an important part of every person’s environment is the presence of other people around him or her, the person’s social environment. To fully understand the social influences on people of a given age, we need to understand the people who are in large measure providing those influences. For instance, to understand development in infants, we need to unravel the effects of their parents’ ages on their social environments. A fifteen-year-old first-time mother will provide parental influences of a very different sort from those provided by an experienced thirty-seven-year-old mother. Consequently, infant development is in part an outgrowth consequence of adult development.

In addition, as lifespan developmentalist Paul Baltes points out, development across the life span involves both gains and losses. With age, certain capabilities become more refined and sophisticated, while others involve loss of skill and capacity. For example, vocabulary tends to grow throughout childhood and continues this growth through most of adulthood. At the same time, certain physical abilities, like reaction time, improve

critical period

a specific time during development when a particular event has its greatest consequences and the presence of certain kinds of environmental stimuli is necessary for development to proceed normally

sensitive period

a point in development when organisms are particularly susceptible to certain kinds of stimuli in their environments, but the absence of those stimuli does not always produce irreversible consequences