The Developing Person Through the Life Span

NINTH EDITION

Kathleen Stassen Berger





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Through the Life Span

NINTH EDITION

Kathleen Stassen Berger

Bronx Community College
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About the Author

Kathleen Stassen Berger received her undergraduate education at Stanford University and Radcliffe College, earned an M.A.T. from Harvard University and an MS and PhD from Yeshiva University. Her broad experience as an educator includes directing a preschool, serving as chair of philosophy at the United Nations International School, teaching child and adolescent development to graduate students at Fordham University and undergraduates at Montclair State University in New Jersey and at Quinnipiac University in Connecticut, as well as teaching social psychology to inmates at Sing Sing Prison.

Throughout most of her professional career, Berger has worked at Bronx Community College of the City University of New York, first as an adjunct and for the past two decades as a full professor. She has taught introduction to psychology, child and adolescent development, adulthood and aging, social psychology, abnormal psychology, and human motivation. Her students—who come from many ethnic, economic, and educational backgrounds and who have a wide range of ages and interests—consistently honor her with the highest teaching evaluations.

Berger is also the author of *The Developing Person Through Childhood and Adolescence* and *Invitation to the Life Span.* Her developmental texts are currently being used at more than 700 colleges and universities worldwide and are available in Spanish, French, Italian, and Portuguese, as well as English. Her research interests include adolescent identity, immigration, and bullying, and she has published many articles on developmental topics in the *Wiley Encyclopedia of Psychology* and in publications of the American Association for Higher Education and the National Education Association for Higher Education. She continues teaching and learning as her four daughters and three grandsons continue to develop, as she interacts with students every semester, and as she revises each edition of her books.

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BRIEF CONTENTS

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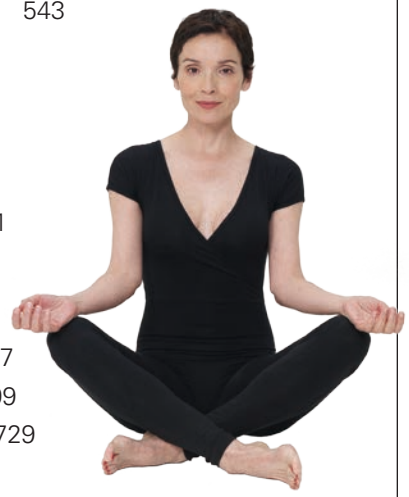

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Preface

My grandson, Asa, is in early childhood. He sees the world in opposites: male/female, child/grown-up, good guys/ bad guys. He considers himself one of the good guys, destroying the bad guys in his active imagination, and in karate kicks in the air.

Oscar, his father, knows better. He asked me if Asa really believes there are good guys and bad guys, or is that just a cliché. I said that most young children believe quite simple opposites.

Undeterred, Oscar told Asa that he knows some adults who were once bad guys but became good guys.

"No," Asa insisted. "That never happens."

Asa is mistaken. As he matures, his body will grow taller but become less active, and his mind will appreciate the development of human behavior as life goes on. This book describes how our thoughts and actions change over the lifespan, including that almost nothing "never happens" as humans grow older.

Oscar is not alone in realizing that people change. Many common sayings affirm development over time: People "turn over a new leaf," are "born-again"; parents are granted a "do-over" when they become grandparents; today is "the first day of the rest of your life." Adults also recognize that the past never disappears; we say, "The apple does not fall far from the tree," and many other adages that stress past influences.

The complexity, the twists and turns, the endless variety of the human experience at every age is fascinating to me, which is why I wrote this book. We all have echoes of Asa in us: We want life to be simple, for people to be good guys. But life is not simple. Learning about human growth helps everyone respond to life's variations and influences, not with imaginary kicks but with wise responses. Knowledge does that. In a vivid example, Stephen Pinker (2011) finds that humans kill each other less now than they did in previous centuries; he cites education as one reason.

Education occurs in hundreds of ways. This textbook is only one of them, an aid to understanding the complexity of your life, my life, and the lives of all the estimated 18 billion humans alive now or who once lived. Nonetheless, although life experiences and thousands of other books contribute to our education, writing this text is my contribution and studying it is yours: Together we might learn how to limit the bad and increase the good in each of us as time goes on.

SOURCE: WORTH PUBLISHERS

Pondering My grandson, Asa, looks thoughtfully at his father, Oscar.

New Material

Every year, scientists discover and explain more concepts and research. The best of these are integrated into the text, including hundreds of new references on many topics—among them the genetics of delinquency, infant nutrition, bipolar and autistic spectrum disorders, attachment over the life span, high-stakes testing, drug use and drug addiction, brain changes throughout adulthood, and ways to die. Cognizant of the interdisciplinary nature of human development, I reflect recent research in biology, sociology, education, anthropology, political science, and more—as well as my home discipline, psychology.

SOURCE: MARK BOWDEN/GETTY IMAGES

Compare These with Those These children seem ideal for cross-sectional research—they are school children of both sexes and many ethnicities. Their only difference seems to be age, so a study might conclude that 6-year-olds raise their hands.

Genetics and social contexts are noted throughout. The variations and hazards of infant day care and preschool education are described; emerging adulthood is further explained in a trio of chapters; the blurry boundaries of adulthood are stressed; the various manifestations, treatments, and prevention of neurocognitive disorders (not just Alzheimer disease) are discussed; and much more.

SOURCE: VAVA VLADIMIR JOVANOVIC/SHUTTERSTOCK

Success At 6 months, she is finally able to grab her toes. From a developmental perspective, this achievement is as significant as walking, as it requires coordination of feet and fingers. Note her expression of determination and concentration.

New Pedagogical Aids

This edition incorporates learning objectives at the beginning of each chapter: The "What Will You Know?" questions indicate important concepts for students to focus on. There is also a new element at the end of each chapter: The "What Have You Learned?" questions help students assess their learning in more detail. Some further explanation follows.

Learning Objectives

Much of what students learn from this course is a matter of attitude, approach, and perspective—all hard to quantify. In addition, there are specific learning objectives, which supplement the key terms that should also be learned. For the first time in this edition, two sets of objectives are listed for each chapter. The first set ("What Will You Know?"), asked at the beginning of each chapter, lists the general ideas that students might remember and apply lifelong. At the end of each chapter are more specific learning objectives ("What Have You Learned?") that connect to each major heading within that chapter.

Ideally, students answer the learning objective questions in sentences, with specifics that demonstrate knowledge. Some items on the new lists are straightforward, requiring only close attention to the chapter content. Others require comparisons, implications, or evaluations.

New *Opposing Perspectives* Boxed Feature and Updated *A View from Science* and *A Case to Study* Features

We all need to develop our critical thinking skills. Virtually every page of this book presents not only facts but also questions with divergent interpretations. A new boxed feature called *Opposing Perspectives* appears in this edition of *The Developing Person Through the Life Span* for the first time. This box focuses on exciting and controversial topics in development—from prenatal sex selection to the right to die. These high-interest sections appear in most chapters and provide information on both sides of an issue so that students can practice weighing evidence, assessing arguments, and coming to their own conclusions.

In addition, the boxes titled *A View from Science,* which explain surprising insights from recent scientific research, and *A Case to Study,* which illustrate developmental issues through the story of specific individuals, have been extensively updated. All these new features are included in the table of contents.

Visualizing Development

Also new to this edition are full-page illustrations of key topics in development. Every chapter now includes an infographic display of data on key issues ranging from the biology of twin births to the economic benefits of a college degree to the range of venues in which elders spend their last years. Many of these infographics combine global statistics, maps, charts, and photographs. Working closely with noted designer Charles Yuen, I have tried to use this visual display to reinforce and explain key ideas.

New Child Development and Nursing Career Appendices

Available online, these new resources link the content of the life-span course to key student career areas—early childhood development and nursing—by correlating the Ninth Edition and its test bank to the NAEYC (National Association for the Education of Young Children) preparation goals and the NCLEX (nursing) licensure exams.

Content Changes to the Ninth Edition

Life-span development, like all sciences, builds on past learning. Many facts and concepts are scaffolds that remain strong over time: ages and stages, norms and variations, dangers and diversities, classic theories and fascinating applications. However, the study of development is continually changed by discoveries and experiences, so no paragraph in this ninth edition is exactly what it was in the eighth edition, much less the first. Some major revisions have been made, and hundreds of new examples are cited. Highlights of this updating appear below.

Part I: The Beginnings

1. The Science of Human Development

- A new chapter opener focuses on Kathleen Berger's (embarrassing) experience at the birth of her grandson, Caleb.
- Comprehensive explanation of the *difference-equals-deficit error* is used to highlight the importance of a multicultural approach in developmental science.

SOURCE: VIKRAM RAGHUVANSHI/GETTY IMAGES

Before Words The New York infant interpreting a smile is doing what babies do: trying to understand communications long before they are able to talk.

- An Opposing Perspectives feature box introduces students to the controversies surrounding the use of the word "race" in the social sciences.
- An explanation of genetics and epigenetics now appears in this introductory chapter as an example of why the study of human development needs to take a multidisciplinary approach.
- A new section on researching the topic of depression provides students with a concrete illustration of the way a multidisciplinary approach can lead to a better understanding of a particular issue.
- Dynamic systems theory and the concept of *differential sensitivity* are used to explain the plasticity of human development.

2. Theories of Development

- The controversial text of *Battle Hymn of the Tiger Mother* is used as an example to illustrate the popularity and ubiquity of theories of human development.
- A new section on Comparing Grand Theories provides thought-provoking comparisons between psychoanalytic, behavioral, and cognitive theories.
- A new feature box on Toilet Training illustrates exactly how various theoretical schools can take radically different approaches to a particular issue.
- An expanded account of sociocultural theory explains the pervasiveness of cultural influences on individual people and the extent to which scientists now acknowledge these influences in their studies.
- A View from Science feature box explores the way evolutionary theory accounts for sexual jealousy between men and women.

SOURCE: AMY WHITT/RADIUS IMAGES/GETTY IMAGES

Bliss for Boys But not for moms. Finger painting develops fine motor skills, which is why it is part of the curriculum in early childhood. This boy shows why most stay-at-home 3-year-olds miss out on this joy.

3. Heredity and Environment

- New material on *copy number variations* as a type of interaction between genes that correlates with a large number of diseases and conditions.
- An expanded discussion of genetic counseling that includes criteria for determining when a pregnant woman should be informed about genetic disorders that tests have detected in her fetus.

4. Prenatal Development and Birth

- Updated data on rates of cesarean deliveries in the United States and around the world.
- A new discussion of *innate vulnerability* as a factor that influences the effects of teratogens on prenatal development.
- New material on the responsibility of doctors and scientists in advising pregnant women about avoiding various teratogens.
- Expanded discussion of problems associated with *low birthweight*, including the complementary roles of mothers and fathers.
- A new section on the way the *parental alliance* can have a healthy influence on pregnancy and birth.

Part II: The First Two Years

5. The First Two Years: Biosocial Development

- A new View from Science feature box on Face Recognition outlines the role of experience in the development of dendrites in the *fusiform face area* of the brain, which in turn gives babies the ability to recognize faces.
- New material on Harming the Infant Brain explores several sources of harm and successful interventions.
- An expanded section on Touch and Pain summarizes current scientific thought on infants' experience of pain.
- A new section on Dynamic Sensory-Motor Systems connects dynamic systems theory with a baby's growing ability to coordinate senses and skills.

- Updated data on infant death rates around the world show the way improved public health measures have increased infant survival rates.
- An account of Susan Beal's research into *sudden infant death syndrome* now ends this chapter, summarizing the complexity of infant care and the way many factors interact to produce any one result.

6. The First Two Years: Cognitive Development

- A new section on Piaget and Modern Research focuses on the limitations of Piaget's conclusions about Sensorimotor Intelligence that have come to light in more recent studies.
- The section called Research on Early Affordances has been updated to include new research on the influence of social context on early affordances.
- A new feature box on Language and Video discusses the connection between a toddler's interpersonal relationships and his or her intellectual growth, cautioning against the claims of certain commercial "educational" products.
- In the section on Information Processing there is more of an emphasis on the active nature of the young child's brain and the influences of experiences and memory on what the child knows.

7. The First Two Years: Psychosocial Development

- A new discussion of Social Awareness complements that on Self-Awareness in the section on the emotional development of toddlers.
- The section on brain growth and its links to this stage of child development is expanded.
- A discussion of Romanian orphans is used to illustrate the hazards associated with insecure attachment.
- A new section on Preventing Problems discusses ways of avoiding insecure attachment between new parents and their babies.
- The discussion of *proximal and distal parenting* has been expanded and highlighted by placing it in an Opposing Perspectives feature box.
- In the section on theories, there are new discussions of Humanism and Evolutionary Theory and the way they apply to this stage of development.

Part III: Early Childhood

8. Early Childhood: Biosocial Development

- Treatment of stress hormones and their effects on the limbic system is expanded.
- The discussion of Nutritional Deficiencies has been expanded to include recent research on food allergies.
- The section on prevention of avoidable injuries has been reorganized to place a greater emphasis on cultural variations.
- A new feature box describes the way scientific research encouraged the elimination of lead from paints and gasoline in the United States and the positive effects this has had on child development.

9. Early Childhood: Cognitive Development

- The discussion of Piaget's Preoperational Thought has been expanded to include the use of *symbolic thought* by young children.
- Vygotsky's Social Learning Theory is applied to the recent emphasis on STEM (Science, Technology, Engineering, Math) education and possible implications for early childhood learning.
- Under Language Learning there is new material on the activities in early childhood that aid later literacy in elementary school.
- A new section covers recent research into strategies for enhancing bilingual education in early childhood.

10. Early Childhood: Psychosocial Development

- The opening section on Emotional Development has been reorganized and rewritten to emphasize the connection with brain maturation during early childhood.
- In the section on Motivation, there is a new discussion of why young children create *imaginary friends*.
- Under Play, the discussion of the importance of culture and cohort has been significantly expanded.
- The expanded treatment of Challenges for Caregivers discusses not only parents but also other significant adults in a child's life.
- The discussion of theoretical approaches to sex and gender has been broadened to include sociocultural theory, humanism, and evolutionary theory.
- The nature/nurture controversy as it applies to early childhood behavior is treated in greater detail.
- Under the topic of discipline, there is a new Opposing Perspectives box on the pros and cons of spanking.

Part IV: Middle Childhood

Chapter 11: Middle Childhood: Biosocial Development

- Extensively updated coverage of psychopathology in childhood including updated coverage of Autism Spectrum Disorder, ADHD, and Specific Learning Disorders.
- New A Case to Study on Lynda, about a young girl with psychological difficulties, whose case is "diagnosed" by a number of professionals, leading to a critical thinking discussion of the challenges in treating and understanding childhood psychopathology.
- New section on gifted education.
- New A View from Science box on childhood obesity.

Chapter 12: Middle Childhood: Cognitive Development

- Updated and extensive section on the international contexts for the growth in childhood cognition, including an extended example of the sense of direction among children in Varanasi, a city in India.
- Updated discussion of international tests and international schooling, including material on the Finnish educational success story.
- New discussion of the Common Core standards.

Chapter 13: Middle Childhood: Psychosocial Development

- New chapter-opening vignette about an 8-year-old boy whose father says he's too young to play video games in which he kills zombies.
- Updated discussion and understanding of risk and resilience, focusing on epigenetics—and the fact that differential sensitivity may mean that what is beneficial to one child may be stressful for another.
- New A Case to Study about child neglect and how to recognize it in children in school.

Part V: Adolescence

Chapter 14: Adolescence: Biosocial Development

- New research on sleep deprivation, including the observation that the light from computers, video games, and even cell phones can interrupt circadian rhythms and interfere with teenagers' natural nighttime sleepiness.
- New coverage of new DSM-5 diagnosis of binge eating disorders.
- Updated data about the timing of adolescent sexual activity.

Chapter 15: Adolescence: Cognitive Development

- New section on the impact of technology on adolescents Digital Natives, which includes material on potential Internet and video game addiction, sexting, and cyberbullying.
- New chapter-opening vignette about the challenges of teaching sometimes "egocentric" adolescents in high school.
- Updated research, including the work of Daniel Kahneman (the Nobel Prize–winning psychologist) on logical fallacies.
- New research on what motivates students to succeed in middle and high school, including theories about students' beliefs about what causes school success.
- New material on high-stakes testing in high school, including coverage of the Common Core and updated international tests including the PISA.

Chapter 16: Adolescence: Psychosocial Development

- New material on culture and cultural differences and similarities in parent-child relationships across the world.
- Updated section and data on relationships between same-sex adolescents.
- New coverage of the impact of culture and context, particularly among Latino/Latina youths and gay youths, on depression in adolescence.
- New Opposing Perspectives box on teenage rage, asking students to think critically about whether rage and rebellion are a culturally determined or universal part of the adolescent experience.

Part VI: Emerging Adulthood

Chapter 17: Emerging Adulthood: Biosocial Development

- Material on homeostasis, organ reserve, and allostatis has been moved to this chapter.
- Significantly reorganized and updated material on psychopathology in emerging adulthood, reflecting new DSM-5 categorizations.
- New Opposing Perspectives box on risk-taking in early adulthood.
- Updated material on abuse of drugs, including coverage of energy drinks and ketamine, and social-norms theories of drug-abuse prevention.

Chapter 18: Emerging Adulthood: Cognitive Development

- Updated research on stereotype threat and its power to influence the success of college students.
- Updated data on trends in higher education, including the increasing costs of college and use of technology in the classroom (including the "flipped classroom" and MOOCs).

Chapter 19: Emerging Adulthood: Psychosocial Development

- Updated material on vocation and vocational identity in emerging adulthood, with coverage of John Holland's research and the recent economic challenges faced by young adults.
- New coverage of the importance of plasticity in emerging adulthood, including the concept of "plasticity genes," which reiterates the ongoing coverage in this book of epigenesis—the impact of environment on gene expression throughout the life span.
- Updated material on how use of the Internet and social media enhances friendships during emerging adulthood.
- New coverage of "churning" relationships which start and stop frequently and are characterized by conflict.
- Updated coverage of the relationship between emerging adults and their parents (which tends to be closer than ever before).

Part VII: Adulthood

Chapter 20: Adulthood: Biosocial Development

- Updated research on aging vision and senses.
- New material on the use of hormone replacement therapy for aging men and women, and adult obesity.

Chapter 21: Adulthood: Cognitive Development

- Updated data on IQ changes in adulthood, including cohort and generational effects.

Chapter 22: Adulthood: Psychosocial Development

- New chapter-opening vignette on Kathleen Berger's broken bones, illustrating the web of connection in adulthood.
- New material on culture and variations in adult children's relationships with their parents.
- Updated section on sibling and "fictive kin" relationships.
- Updated section on possible predictors of marital happiness and new research on same-sex marriage and adoption.
- New box focusing on diversity in the workplace and the harm caused by "microaggression" among co-workers.

Part VIII: Late Adulthood

Chapter 23: Late Adulthood: Biosocial Development

- New box on sex in later adulthood—focusing on how satisfied many older adults are with their sexuality.
- New material on driving in late adulthood, including material on policy issues and changes in our senses as we age.
- Recent research on normative brain changes in late adulthood, including coverage of brain shrinkage.
- Updated research on the theories of aging and controversies over how to delay it—including calorie restriction, sirtuins, and reversatrol.

Chapter 24: Late Adulthood: Cognitive Development

- Significantly revised and updated presentation on neurocognitive disorder to reflect the new DSM-5 categorization.
- Significantly updated and revised discussion of brain function and cognitive processes during aging, including developments in memory and executive control processes.
- New boxes on cognitive errors during adulthood, focusing on dual processing and intelligence testing in late adulthood.

Chapter 25: Late Adulthood: Psychosocial Development

- New coverage of compulsive hoarding, a new DSM-5 diagnosis.
- New Opposing Perspectives box on positive world view among elders.
- Updated section on employment in late adulthood to reflect the fact that many elders are still in the workforce, or would like to be.

Epilogue

- Updated coverage of hospice care in the U.S. and around the world.
- New material on planning for the end of life, including coverage of advanced directives.
- Updated material on bereavement and grief.

Ongoing Features

Many characteristics of this book have been acclaimed since the first edition and have been retained in this revision.

Writing That Communicates the Excitement and Challenge of the Field

An overview of the science of human development should be lively, just as real people are. Each sentence conveys tone as well as content. Chapter-opening vignettes that describe real-life situations bring student readers into the immediacy of development. Examples and explanations abound, helping students make the connections among theory, research, and their own experiences.

Coverage of Brain Research

Inclusion of the exciting results from neuroscience is now a familiar feature of this book. Brain development is the most obvious example: Every trio of chapters includes a section on the brain, often enhanced with charts and photos to help students understand its inner workings. The following list highlights some of this material.

- The role of dopamine, serotonin, and growth factors such as GDNF in depression, p. 17
- Epigenetics and brain function in depressed individuals, pp. 17–19
- PET scans of brains of a depressed and a non-depressed person, p. 19; illustrated, p. 18
- Neuroscience and the limits of Piaget's developmental theory, p. 47
- Brain scans of adults with ADHD, p. 48; illustrated, p. 48
- Influence of copy number variations on basic brain structures, p. 80
- Prenatal growth of the brain, pp. 98–99; illustrated, pp. 98–99
- Teratogenic effects on brain development, p. 106–111; illustrated, p. 107
- Brain development in the first two years, pp. 129–134; illustrated, pp. 129–130
- Experience-expectant and experience-dependent brain development, p. 133
- Brain immaturity and cross-modal perception, p. 142
- Implication of low serotonin levels in SIDS, p. 150
- Limitations of Piaget's theory as revealed by brain scans, pp. 161–162
- Techniques of infant brain scans, p. x; illustrated, p. 162
- Mirror neurons and infant cognition, p. 162
- Brain developments that support social emotions, pp. 185–186
- The effect of the stress hormone cortisol on the developing brain, p. 186
- Genetic influences on temperament, especially the combination of DRD4 VNTR and 5-HTTLPR genes, p. 188
- Brain maturation and synchrony, p. 191
- Attachment and brain development, p. 195
- *A View from Science:* the effect of lead exposure on brain development, pp. 230–231
- Brain development in early childhood (prefrontal cortex, myelination, lateralization, the limbic system), pp. 219–223; illustrated, pp. 219–220
- Abnormal growth of the corpus callosum and ADHD, p. 223
- Maturation of the prefrontal cortex and theory of mind, p. 254; illustrated p. 255
- Cultural differences in executive function among 5-year-olds, p. 254
- The influence of myelination of the limbic system and growth of the prefrontal cortex in development of emotional regulation, pp. 276–277
- The effects of physical exercise on the brain, p. 311
- Brain development in middle childhood, pp. 318–323
- Neurological advances and selective attention, p. 319
- Neurological scans confirm usefulness of information-processing approach, p. 343

SOURCE: SVETIKD/GETTY IMAGES

Compare These with Those Any group, such as these 16-year-olds, in cross-sectional research may differ in a way that is not obvious—perhaps income, national origin, or culture—and that may be the underlying reason for any observed age differences.

Development of control processes in middle childhood, p. 346
Brain abnormality as a possible factor in bullying, p. 387
The role of the pituitary gland in hormone production, pp. 402–403
The role of the brain in regulating circadian rhythms, pp. 403–404
Adolescent brain development; heightened arousal of reward areas of the brain, pp. 416–418
Proportion of gray matter from childhood through adolescence, illustrated p. 416
Benefits of adolescent brain development, pp. 418–419
Dual processing as a result of brain maturation, pp. 438–439
Risk-taking and brain activity, p. 438; illustrated p. 439
Neurological factors as predictors of delinquency in adolescence, p. 477
Drug use and potential harm to the brain, pp. 478–479
The impact of alcohol on the adolescent brain, p. 481
Physiological responses affecting neurological patterns, p. 502
Brain development and hormones as factors in risk-taking, p. 507
Brain development and postformal thought, pp. 519–520
Brain changes from age 14 to age 25, illustrated p. 520
Lust and affection centered in different brain areas, p. 553
The aging brain: neurological changes in adulthood, p. 577
Causes of severe brain loss before age 65, p. 577
Thirty distinct brain areas involved in vision, p. 579
Complications in calculating adult IQ due to brain changes, p. 605
Fluid intelligence and overall brain health, p. 609
The effects of stress on the brain, p. 615
Multitasking and the aging brain, p. 621
Brain changes due to experience and expertise, p. 626
Correlation between brain function and personality, p. 636, illustrated p. 637
Encoding of the sense of unfairness in the brain, p. 654
Compensation strategies for brain loss in late adulthood, pp. 676–683
The aging brain: neurological changes in late adulthood, pp. 682–683
Neurogenesis in late adulthood, p. 683
Brain abnormalities in neurocognitve disorders, p. 711
Specific genes associated with Alzheimer disease; scans of progress of AD, p. 712
Correlation between vascular dementia and the ApoE4 allele, p. 712
Repeated brain trauma as a precursor of dementia, p. 714
Expression of creativity and its impact on brain health, p. 722
Opposing Perspectives: brain activity in response to disappointment: differences between old, healthy individuals; old, depressed individuals; and young individuals, p. 733; illustrated p. 733
Brain death as determining factor in declaring a person legally dead, pp. 772–773

DASHA PETRENKO/SHUTTERSTOCK

Don't Worry Contemporary teenagers, like this couple, are more likely to be seen in public hugging and kissing but are less likely to be sexually active than similar couples were 20 years ago.

Coverage of Diversity

Cross-cultural, international, multiethnic, sexual orientation, wealth, age, gender—all these words and ideas are vital to appreciating how people develop. Research uncovers surprising similarities and notable differences: We have much in common, yet each human is unique. From the discussion of social contexts in Chapter 1 to the coverage of cultural differences in mourning in the Epilogue, each chapter highlights possibilities and variations.

New research on family structures, immigrants, bilingualism, single adults, and ethnic differences in health are among the many topics that illustrate human diversity. Listed here is a smattering of the discussions of culture and diversity in this new edition. Respect for human differences is evident throughout. You will note

that examples and research findings from many parts of the world are included, not as add-on highlights, but as integral parts of the description of each age.

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Healthy? Children have high energy but small stomachs, so they enjoy frequent snacks more than bog meals. Yet snacks are typically poor sources of nutrition.

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E. HANAZAKI PHOTOGRAPHY/FLICKR RF/GETTY IMAGES

No Toys Boys in middle childhood are happiest playing outside with equipment designed for work. This wheelbarrow is perfect, especially because at any moment the pusher might tip it.

JGI/JAMIE GRILL/BLEND IMAGES/GETTY IMAGES

A Social Gathering Fifty years ago teens hung out on the corner or at the local drug store. Now they gather in someone's house. Each seems to be in his or her own world, but show and tell is part of technology for adolescents.

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Up-to-Date Coverage

My mentors welcomed curiosity, creativity, and skepticism; as a result, I am eager to read and analyze thousands of articles and books on everything from Alzheimer disease to zygosity. The recent explosion of research in neuroscience and genetics has challenged me, once again, first to understand and then to explain many complex findings and speculative leaps. My students continue to ask questions and share their experiences, always providing new perspectives and concerns.

Topical Organization Within a Chronological Framework

The book's basic organization remains unchanged. Four chapters begin the book with coverage of definitions, theories, genetics, and prenatal development. These chapters function not only as a developmental foundation but also as the structure for explaining the life-span perspective, plasticity, nature and nurture, multicultural awareness, risk analysis, gains and losses, family bonding, and many other concepts that yield insights for all of human development.

The other seven parts correspond to the major periods of development. Each part contains three chapters, one for each of the three domains: biosocial, cognitive, and psychosocial. The topical organization within a chronological framework is a useful scaffold for students' understanding of the interplay between age and domain. The chapters are color-coded with tabs on the right-hand margins. The pages of the biosocial chapters have turquoise tabs, the cognitive chapters have purple tabs, and the psychosocial chapters have green tabs.

Three Series of Integrated Features

Three series of deeper discussions appear as integral parts of the text, and only where they are relevant. Readers of earlier editions will remember *A Case to Study* and *A View from Science*; new to this edition is the *Opposing Perspectives* feature.

End-of-Chapter Summary

Each chapter ends with a summary, a list of key terms (with page numbers indicating where the word is introduced and defined), key questions, and three or four application exercises designed to help students apply concepts to everyday life. Key terms appear in boldface type in the text and are defined in the margins and again in a glossary at the back of the book. The outline on the first page of each chapter, the new learning objectives, and the system of major and minor subheads facilitate the survey-question-read-write-review (SQ3R) approach.

A "Summing Up" feature at the end of each section provides an opportunity for students to pause and reflect on what they've just read. Observation Quizzes inspire readers to look more closely at certain photographs, tables, and figures. The "Especially for . . . " questions in the margins, many of which are new to this edition, apply concepts to real-life careers and social roles.

Photographs, Tables, and Graphs That Are Integral to the Text

Students learn a great deal from this book's illustrations because Worth Publishers encourages authors to choose the photographs, tables, and graphs and to write captions that extend the content. Appendix A furthers this process by presenting numerous charts and tables that contain detailed data for further study.

MASKOT/GETTY IMAGES

Didn't Want to Marry This cohabiting couple decided to wed only after they learned that her health insurance would not cover him unless they were legally married. Two years later they had a son, who is now developing happily and well. She is pregnant with their second child, and he is searching for a house to buy. Would this have happened if they were still unmarried?

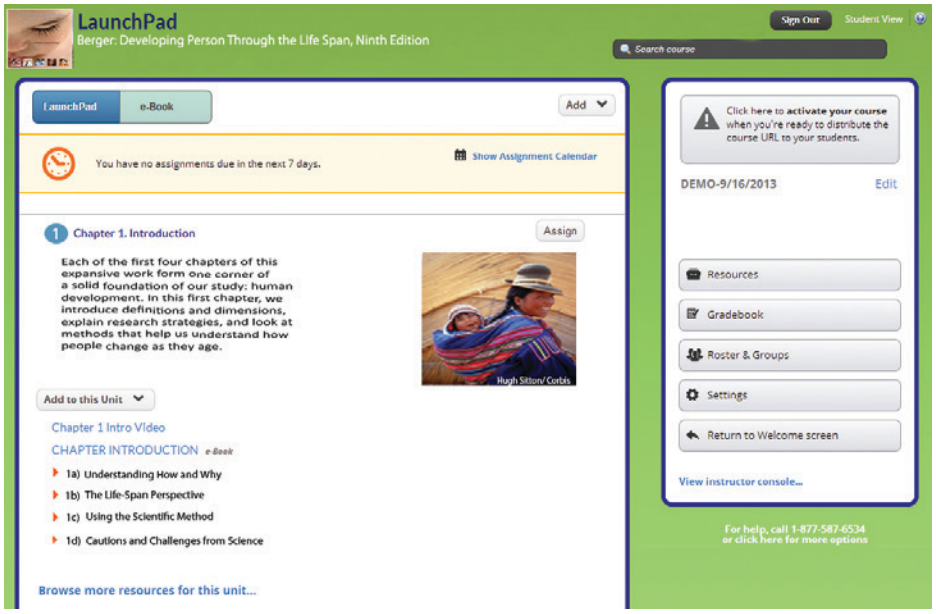
Supplements

After teaching every semester for many years, I know well that supplements can make or break a class. Students are now media savvy and instructors use tools that did not exist when they themselves were in college. Many supplements are available for both students and professors.

LaunchPad with LearningCurve Quizzing

A comprehensive web resource for teaching and learning development, LaunchPad combines rich media resources and an easy-to-use platform. For students, it is the ultimate online study guide with videos, ebook, and the LearningCurve adaptive quizzing system. For instructors, LaunchPad is a full-course space where class documents can be posted, quizzes are easily assigned and graded, and students' progress can be assessed and recorded. The LaunchPad can be previewed at www.worthpublishers.com/launchpad/bergerls9e. You'll find the following in our LaunchPad:

The **LearningCurve** quizzing system was designed based on the latest findings from learning and memory research. It combines adaptive question selection, immediate and valuable feedback, and a game-like interface to engage students in a learning experience that is unique to them. Each LearningCurve quiz is fully integrated with other resources in LaunchPad through the Personalized Study Plan, so students will be able to review with Worth's extensive library of videos and activities. And state-of-the-art question-analysis reports allow instructors to track the progress of individual students as well as their class as a whole. A team of dedicated instructors—including Jim Cuellar, Indiana University, Bloomington; Lisa Hager, Spring Hill College; Jessica Herrick, Mesa State College; Sara Lapsley, Simon Fraser University; Rosemary McCullough, Ave Maria University; Wendy Morrison, Montana State University; Emily Newton, University of California, Davis; Diana Riser, Columbus State University; Curtis Visca, Saddleback College; and Devon Werble, East Los Angeles Community College—have worked closely to develop more than 5,000 quizzing questions developed specifically for this book.



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Human Development Videos

In collaboration with dozens of instructors and researchers, Worth has developed an extensive archive of video clips. This collection covers the full range of the course, from classic experiments (like the Strange Situation and Piaget's conservation tasks) to investigations of children's play, adolescent risk-taking, and the devastation of Alzheimer disease. Instructors can assign these videos to students through LaunchPad or choose one of 50 popular video activities that combine videos with short-answer and multiple-choice questions. For presentation purposes, our videos are available in a variety of formats to suit your needs, including download and flash drive.

Instructor's Resources

Now fully integrated with LaunchPad, this collection of resources written by Richard O. Straub (University of Michigan, Dearborn) has been hailed as the richest collection of instructor's resources in developmental psychology. The resources include learning objectives, springboard topics for discussion and debate, handouts for student projects, course-planning suggestions, ideas for term projects, and a guide to audiovisual and online materials.

Interactive Presentation Slides

A new extraordinary series of "next-generation" interactive presentation lectures gives instructors a dynamic yet easy-to-use new way to engage students during classroom presentations of core developmental psychology topics. Each lecture provides opportunities for discussion and interaction and enlivens the psychology classroom with an unprecedented number of embedded video clips and animations from Worth's library of videos. In addition to these animated presentations, Worth also offers a set of prebuilt slide sets with all chapter art and illustrations. These slides can be used as is or can be customized to fit individual needs.

Test Bank and Computerized Test Bank

The test bank, prepared by Jessica Siebenbruner, Winona State University, and Jillene Seiver, Bellevue College, includes at least 100 multiple-choice and 70 fill-in-the-blank, true-false, and essay questions for each chapter. Good test questions are critical to every course and we have gone through each and every one of these test questions with care. We have added more challenging questions, and questions are keyed to the textbook by topic, page number, and level of difficulty. We have also written rubrics for grading all of the short answer and essay questions in the test bank.

The Diploma computerized test bank, available on a dual-platform CD-ROM for Windows and Macintosh, guides instructors step by step through the process of creating a test. It also allows them to quickly add an unlimited number of questions; edit, scramble, or resequence items; format a test; and include pictures, equations, and media links. The accompanying gradebook enables instructors to record students' grades throughout the course and includes the capacity to sort student records, view detailed analyses of test items, curve tests, generate reports, and add weights to grades.

The CD-ROM is also the access point for Diploma Online Testing, which allows instructors to create and administer secure exams over a network or over the Internet. In addition, Diploma has the ability to restrict tests to specific computers or time blocks. Blackboard-formatted versions of each item in the test bank are available on the CD-ROM.

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I'd like to thank the academic reviewers who have read this book in every edition and who have provided suggestions, criticisms, references, and encouragement. They have all made this a better book. I want to mention especially those who have reviewed this edition:

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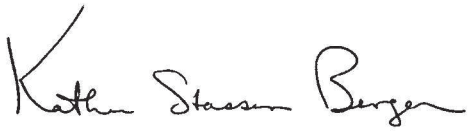


New York, March 2014

PART

I

CHAPTERS 1•2•3•4

the beginnings

The science of human development has many beginnings; each of the first four chapters of this text forms one corner of a solid foundation for our study.

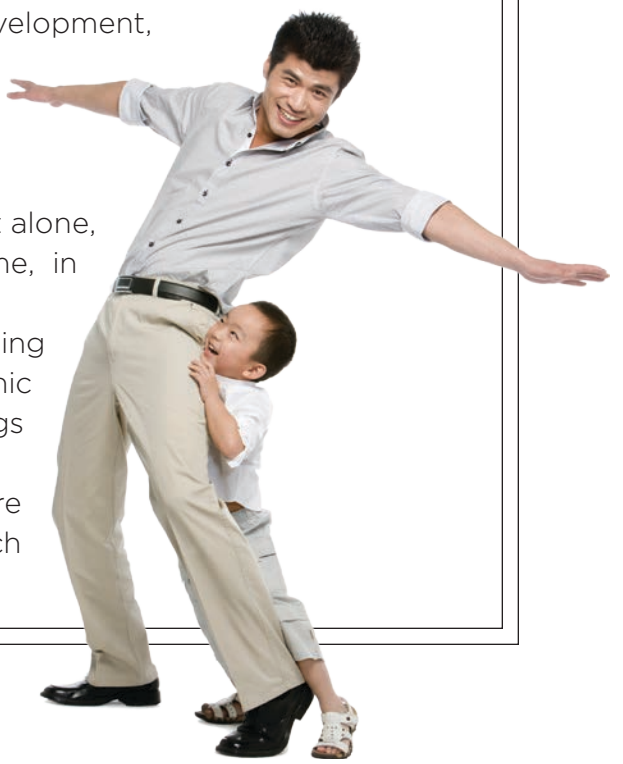
Chapter 1 introduces definitions and dimensions, explaining research strategies and methods that help us understand how people change as they age. The power of culture and context, as well as the dynamic interactions of human development, are emphasized.

Without ideas we would wonder where to start. Chapter 2 provides guideposts. Five major theories, each leading to many other theories and hypotheses, are described.

Chapter 3 explains the specifics of heredity. Genes never act alone, yet no development—whether in body or brain, at any time, in anyone—is unaffected by DNA.

Chapter 4 details the early biological growth of each developing person, from one cell to a newborn. Circumstances in embryonic and fetal growth impact the entire life span; prenatal beginnings continue to echo in the final hours.

The science and the wonder of human life begin long before the first breath. Understanding the beginnings described in each of these chapters prepares us for every later time.



Left: Jose Luis Pelaez Inc./Getty Images
Right: Lane Oatey/Getty Images

CHAPTER 1

The Science of Human Development

WHAT WILL YOU KNOW?

1. What are the complexities of studying growth over the life span?
2. What research methods do developmentalists use to study change over time?
3. Why do scientific conclusions need to be interpreted with caution?

At 6:11 A.M. I hold my daughter's bent right leg in place with all my strength. A nurse holds her left leg while the midwife commands, "Push . . . push . . . push." Finally, a head is visible, small and wet, but perfect. In a moment, body and limbs emerge, all 4,139 grams of Caleb, perfect as well. Every number on the monitor is good, and Caleb breathes and moves as a healthy newborn should. Bethany, smiling, begins to nurse.

This miracle makes celestial music ring in my ears. The ringing grows louder. Suddenly, I am on the floor, looking up at six medical professionals: I have fainted.

"I am fine," I insist, scrambling back onto the couch where I spent the night. Six people stare at me.

"You need to go to triage," one says.

"No, I am fine. Sorry I fainted."

"We must send you to triage, in a wheelchair."

What can I say to make them ignore me and focus on Caleb?

"You can refuse treatment," a nurse tells me.

I remember; the law requires patient consent.

I am wheeled down to Admitting; I explain that I was with my laboring daughter all night with no food or sleep. I refuse treatment.

The admitting nurse takes my blood pressure—normal—and checks with her supervisor. She lets me return before the placenta is delivered.

I am thankful, but puzzled. I understand birth, numbers, jargon, monitors, body language, medical competence, hospital cleanliness, hall noises, and more. I do not panic. I told the triage nurse that I had not slept or eaten all night—true, but I had done that before, never fainting. Why this time?

This incident is a fitting introduction for Chapter 1, which begins to explain what we know, what we don't know, and how we learn about human development. For me and other scientists, and also for you and everyone else, surprises occur as each life is lived. Emotions mix with intellect, family bonds with professional competence, contexts with cultures, personal experiences with academic knowledge, general conclusions with individual oddities.

Many details of Caleb's arrival were distinct from details of birth in other cultures and eras. Yet other aspects have always been part of the human experience. This chapter, and those that follow, will help you understand the specifics and the universals of human life.

Left: Hugh Sitton/Corbis
Top: Lane Oatey/Getty Images

COURTESY KATHLEEN BERGER

Both Blissful One of us rests after an arduous journey, and the other rejoices after crying and fainting.

Observation Quiz What is universal and what is culture-specific about Caleb's birth? (see answer, page 5)

>> Understanding How and Why

science of human development The science that seeks to understand how and why people of all ages and circumstances change or remain the same over time.

The **science of human development** *seeks to understand how and why people—all kinds of people, everywhere, of every age—change over time.* The goal of this science is for all 7 billion people on Earth to fulfill their potential. Growth is *multidirectional, multicontextual, multicultural, multidisciplinary,* and *plastic,* five terms that will soon be explained.

First, however, we need to emphasize that developmental study is a *science.* It depends on theories, data, analysis, critical thinking, and sound methodology, just like every other science. All scientists ask questions and seek answers in order to ascertain "how and why."

Science is especially useful when we study people: Lives depend on it. What should pregnant women eat? How much should babies cry? When should children be punished? Under what circumstances should adults marry, or divorce, or retire, or die? People disagree, sometimes vehemently, because emotions, experiences, and cultures differ.

The Scientific Method

scientific method A way to answer questions that requires empirical research and data-based conclusions.

hypothesis A specific prediction that can be tested.

empirical evidence Evidence that is based on observation, experience, or experiment, not theory.

Facts may be misinterpreted and applications may spring from assumptions, not from data. To avoid unexamined opinions and to rein in personal biases, researchers follow the five steps of the **scientific method** (see Figure 1.1):

1. *Begin with curiosity.* On the basis of theory, prior research, or a personal observation, pose a question.
2. *Develop a hypothesis.* Shape the question into a **hypothesis,** a specific prediction to be examined.
3. *Test the hypothesis.* Design and conduct research to gather **empirical evidence** (data).
4. *Analyze the evidence gathered in the research.* Conclude whether the hypothesis is supported or not.
5. *Report the results.* Share the data, conclusions, and alternative explanations.

replication The repetition of a study, using different participants.

As you see, developmental scientists begin with curiosity and then seek the facts, drawing conclusions after careful research. **Replication**—repeating the procedures and methods of a study with different participants—may be a sixth and crucial step (Jasny et al., 2011).

Scientists study the reported procedures and results of other scientists. They read publications, attend conferences, send emails, and collaborate with others far from home. Conclusions are revised, refined, and confirmed after replication. Scientists still sometimes stray, drawing conclusions too quickly, misinterpreting data, or ignoring issues, as discussed at the end of this chapter. Nonetheless, testing hypotheses by gathering empirical data is the foundation of our study.

FIGURE 1.1

Process, Not Proof Built into the scientific method—in questions, hypotheses, tests, and replication—is a passion for possibilities, especially unexpected ones.


© JOSE LUIS PELAEZ/BLEND IMAGES/CORBIS
1. Curiosity


PHOTODISC
2. Hypothesis


© PICTURE PARTNERS/ALAMY
3. Test


MOODBOARD/SUPERSTOCK
4. Analyze data and draw conclusions


© BLAKE KENT/DESIGN PICS/DESIGN PICS/CORBIS
5. Report the results

The Nature–Nurture Controversy

An easy example of the need for science concerns a great puzzle of development, the *nature–nurture debate*. **Nature** refers to the influence of the genes that people inherit. **Nurture** refers to environmental influences, beginning with the health and diet of the embryo's mother and continuing lifelong, including family, school, community, and societal experiences.

nature A general term for the traits, capacities, and limitations that each individual inherits genetically from his or her parents at the moment of conception.

nurture A general term for all the environmental influences that affect development after an individual is conceived.

The nature–nurture debate has many other names, among them *heredity–environment* and *maturation–learning*. Under whatever name, the basic question is: *How much of any characteristic, behavior, or emotion is the result of genes, and how much is the result of experience?*

Some people believe that most traits are inborn, that children are innately good ("an innocent child") or bad ("beat the devil out of them"). Others stress nurture, crediting or blaming parents, or neighborhood, or drugs, or even food, when someone is good or bad, a hero or a criminal.

Neither belief is accurate. The question is "how much," not "which," because *both* genes and the environment affect every characteristic: Nature always affects nurture, and then nurture affects nature. Even "how much" is misleading, if it implies that nature and nurture each contribute a fixed amount (Eagly & Wood, 2013; Lock, 2013).

A further complication is that the impact of a beating, or a beer, or any other experience might be magnified because of a particular set of genes. The opposite is true as well: Something in the environment—perhaps a poison, perhaps a blessing—might stop a gene before it could be expressed. Thus each aspect of nature and nurture depends on other aspects of nature and nurture, in ways that vary for each person.

The most obvious examples occur when a virus or a drug distorts the body or brain of a child. Less obvious, but probably more important, are protective influences, such as special nurturance that helps a person avoid learning disabilities or self-destructive impulses.

A complex nature–nurture interaction is apparent for every moment of our lives. For example, I fainted at Caleb's birth because of at least ten factors (blood sugar, exhaustion, exertion, hormones, gender, age, family history, memory, relief, joy), each influenced by both nature and nurture. The combination, and no single factor, landed me on the floor.

>> Answer to Observation Quiz
(from page 3): Dozens of answers are correct. From the photo, you can see at least two universals—the family connection between grandmother and grandchild, and the relatively large head of the newborn. You can also see two specifics: the clothes we are both wearing (Caleb's little blue cap), and the setting—an urban hospital (note objects on the window sill, the view) not a humble home.

SUMMING UP

The science of human development seeks to understand how and why each individual is affected by the changes that occur over the life span. Every science, including this one, follows five steps: question, hypothesis, empirical research, conclusions based on data, and publication. A sixth step—replication—confirms, refutes, or refines conclusions. Although no human is completely objective, the scientific method is designed to avoid unexamined opinions and wishful thinking.

Both genes and environment affect every human characteristic in an explosive interaction of nature and nurture. No human behavior—whether wonderful or horrific—results from genes or experiences alone.

>> The Life-Span Perspective

The **life-span perspective** (Fingerman et al., 2011; Lerner et al., 2010) takes into account all phases of life and has led to a new understanding of human development as multidirectional, multicontextual, multicultural, multidisciplinary, and plastic (Baltes et al., 2006; Haase et al., 2013; Staudinger & Lindenberger, 2003).

life-span perspective An approach to the study of human development that takes into account all phases of life, not just childhood or adulthood.

TABLE 1.1 Age Ranges for Different Stages of Development

Infancy	0 to 2 years
Early childhood	2 to 6 years
Middle childhood	6 to 11 years
Adolescence	11 to 18 years
Emerging adulthood	18 to 25 years
Adulthood	25 to 65 years
Late adulthood	65 years and older

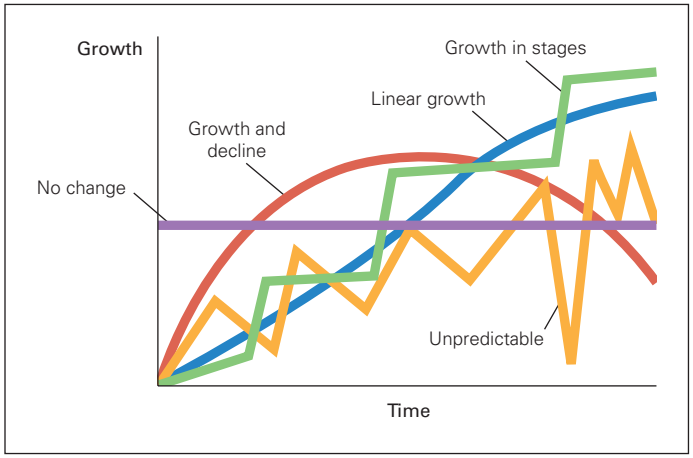


FIGURE 1.2

Patterns of Developmental Growth Many patterns of developmental growth have been discovered by careful research. Although linear (or near-linear) progress seems most common, scientists now find that almost no aspect of human change follows the linear pattern exactly.

critical period A time when a particular type of developmental growth (in body or behavior) must happen if it is ever going to happen.

Age periods (see Table 1.1) are only a rough guide, a truism particularly apparent in adulthood. For example, emerging adulthood, defined as ages 18 to 25, is not a period accepted by all scholars. Many prefer dividing adulthood into *early adulthood* for ages 20 to 40, *middle adulthood* for ages 40 to 65, and *late adulthood*, said to begin at age 60, 65, or even 70. As emphasized time and again, birthdays are an imperfect measure of aging.

As you will learn, developmentalists are reluctant to specify chronological ages for any period of development, since time is only one of many variables that affect each person. However, age is a crucial variable, and development can be segmented into periods of study. Approximate ages for each period are given here.

Development Is Multidirectional

Multiple changes, in every direction, characterize the life span. Traits appear and disappear, with increases, decreases, and zigzags (see Figure 1.2). An earlier idea—that all development advances until about age 18, steadies, and then declines—has been refuted by life-span research.

Sometimes *discontinuity* is evident: Change can occur rapidly and dramatically, as when caterpillars become butterflies. Sometimes *continuity* is found: Growth can be gradual, as when redwoods add rings over hundreds of years. Some characteristics do not seem to change at all: Almost every zygote is XY or XX, male or female, and chromosomal sex is lifelong.

Humans experience simple growth, radical transformation, improvement, and decline as well as stability, stages, and continuity—day to day, year to year, and generation to generation. Not only do the pace and direction of change vary, but each characteristic follows its own trajectory: Losses in some abilities occur simultaneously with gains in others. For example, babies lose some ability to distinguish sounds from other languages when they begin talking in whatever language they hear, and when adults quit their paid job they often become more creative.

The timing of losses and gains, impairments or improvements varies as well. Some changes are sudden and profound because of a **critical period,** which is either when something *must* occur to ensure normal development or the only time when an abnormality might occur. For instance, the human embryo grows arms and legs, hands and feet, fingers and toes, each over a critical period between 28 and 54 days after conception. After that, it is too late: Unlike some insects, humans never grow replacement limbs.

We know this fact because of a tragic episode. Between 1957 and 1961, thousands of newly pregnant women in 30 nations took *thalidomide*, an antinausea drug. This change in nurture (via the mother's bloodstream) disrupted nature (the embryo's genetic program). If an expectant woman ingested thalidomide during the 26 days of the critical period for limb formation, her newborn's arms or legs were malformed or absent (Moore & Persaud, 2007). Whether all four limbs, or just arms, or only hands were missing depended on exactly when the drug was taken. If thalidomide was ingested only before day

28 or after day 54, no harm occurred since the critical period had ended.

Life has few such dramatic critical periods. Often, however, a particular development occurs more easily—but not exclusively—at a certain time. That is called a **sensitive period.**

An example is learning language. If children do not communicate in their first language between ages 1 and 3, they might do so later (hence, these years are not critical), but their grammar is impaired (hence, these years are sensitive).

Similarly, childhood is a sensitive period for learning to pronounce a second or third language with a native accent. Many adults master a new language, but strangers still ask, "Where are you from?" Native speakers can detect an accent that reveals that the first language was something else.

© BILL BACHMANN / PHOTOEDIT

Your Child's Teacher This 19-year-old attending Oang Ninh College in Hanoi, Vietnam, is studying to be a teacher. Emerging adulthood worldwide is a period of exploration and change: He may change professions and locations in the next six years.

sensitive period A time when a certain type of development is most likely to happen or happens most easily, although it may still happen later with more difficulty. For example, early childhood is considered a sensitive period for language learning.

Often in development, individual exceptions to general patterns occur. Sweeping generalizations, like those in the language example, do not hold true in every case. Accent-free speech *usually* must be learned before puberty, but exceptional nature and nurture (a person naturally adept at hearing and then immersed in a new language) can result in flawless second-language pronunciation (Birdsong, 2006; Munoz & Singleton, 2011).

Development Is Multicontextual

The second insight we garner from the life-span perspective is that development is multicontextual. Those many contexts are physical (climate, noise, population density, etc.), family (marital status, family size, members' age and sex), community (urban, suburban, or rural, multiethnic or not, etc.), and so on, with each context affecting everyone.

Ecological Systems

A leading developmentalist, Urie Bronfenbrenner (1917–2005), led the way to considering contexts. Just as a naturalist studying an organism examines the ecology (the relationship between the organism and its environment) of a tiger, or tree, or trout, Bronfenbrenner recommended that developmentalists take an **ecological-systems approach** (Bronfenbrenner & Morris, 2006) to understanding humans.

ecological-systems approach The view that in the study of human development, the person should be considered in all the contexts and interactions that constitute a life. (Later renamed *bioecological theory.*)

CLARO CORTEZ/REUTERS/LANDOV

Cat, Duck, or Dog? Nine-year-old Sun Minyi must circle the correct animal and then write "cat" in his workbook—not hard at his age. Then why is he listening so intently? He is learning English near Shanghai. His first language is Chinese.

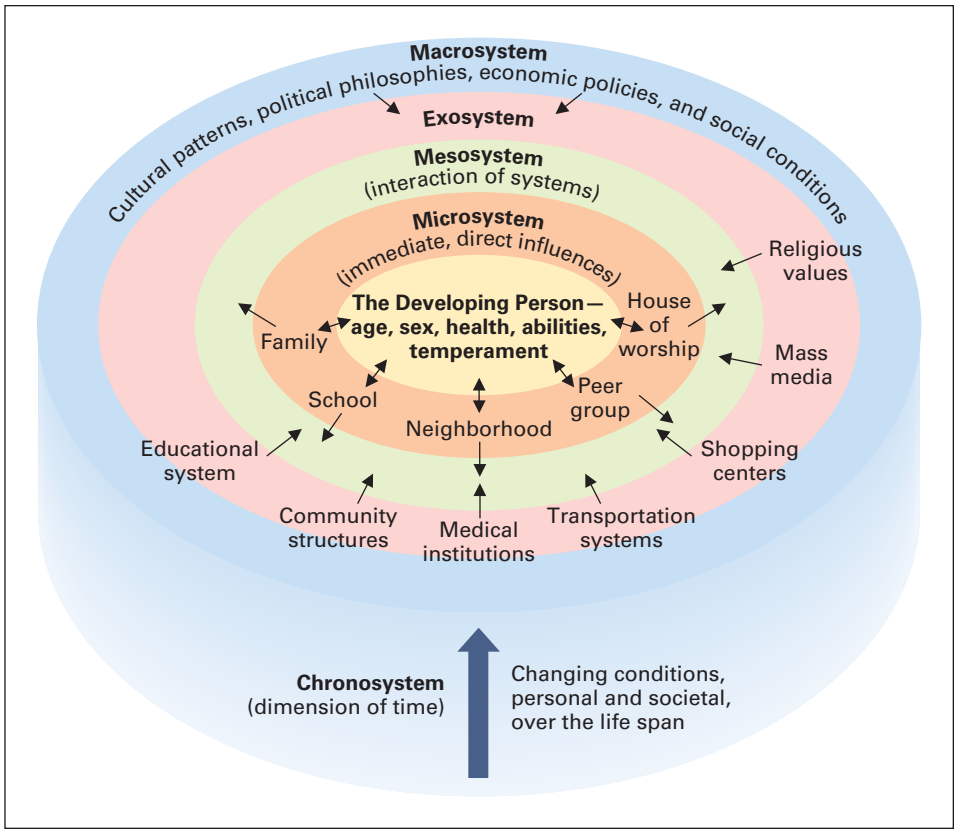
Observation Quiz (see answer, page 8): What factors suggest this is not a U.S. classroom?

The ecological-systems approach recognizes three nested levels that surround individuals and affect them (see Figure 1.3). Most obvious are *microsystems*—each person's immediate surroundings, such as family and peer group. Also important are *exosystems* (local institutions such as school and church) and *macrosystems* (the larger social setting, including cultural values, economic policies, and political processes).

Two more systems are related to these three. One is the *chronosystem* (literally, "time system"), which is the historical context. The other is the *mesosystem*, consisting of the connections among the other systems.

FIGURE 1.3

The Ecological Model According to developmental researcher Urie Bronfenbrenner, each person is significantly affected by interactions among a number of overlapping systems, which provide the context of development. *Microsystems*—family, peer groups, classroom, neighborhood, house of worship—intimately and immediately shape human development. Surrounding and supporting the microsystems are the *exosystems*, which include all the external networks, such as community structures and local educational, medical, employment, and communications systems, that influence the microsystems. Influencing both of these systems is the *macrosystem*, which includes cultural patterns, political philosophies, economic policies, and social conditions. *Mesosystems* refer to interactions among systems, as when parents and teachers coordinate to educate a child. Bronfenbrenner added a fifth system, the *chronosystem*, to emphasize the importance of historical time.



>> Answer to Observation Quiz
(from page 7): Few U.S. third-grade classes have desks set up in rows, and most U.S. teachers expect children to talk as much as listen—especially when learning a new language. In addition, class size is larger in China (an average of 37 students), which seems likely here, given the layout shown.

Bronfenbrenner believed that people need to be studied in their natural contexts. He looked at children playing, or mothers putting babies to sleep, or nurses in hospitals—never asking people to come to a scientist's laboratory for a contrived experiment. Toward the end of his life, Bronfrenbrenner renamed his approach *bioecological theory* to highlight the role of biology, recognizing that systems within the body (e.g., the sexual-reproductive system, the cardiovascular system) affect the external systems (Bronfenbrenner & Morris, 2006).

Bronfenbrenner's systems perspective remains useful, as is evident in a recent discussion of climate change (Boon et al., 2012). Two contexts—the historical and the socioeconomic—are so basic to understanding people throughout the life span that we explain them now.

The Historical Context

cohort A group defined by the shared age of its members, who, because they were born at about the same time, move through life together, experiencing the same historical events and cultural shifts.

All persons born within a few years of one another are called a **cohort,** a group defined by its members' shared age. Cohorts travel through life together, affected by the interaction of their chronological age with the values, events, technologies, and culture of the era. From the moment of birth, when parents decide the name of their baby, historical context affects what may seem like a private and personal choice (see Table 1.2).

In another life-span example, the years 18 to 25 constitute a sensitive period for consolidation of political values. Therefore, experiences and circumstances during emerging adulthood have a lifelong impact.

Consider attitudes about same-sex marriage. A few decades ago, many homosexual people were "in the closet." As a result, young heterosexual adults were totally unaware that any gay or lesbian person might want to be married, and the political leadership was decidedly homophobic.

The political climate has changed dramatically in recent years, as of February 2014, 17 U.S. states allow same-sex marriages. The present generation is more approving than the generation of a decade ago. Those who were young adults 60 years ago mostly disapprove (only 31 percent favor same-sex marriage) compared to young adults now (70 percent are in favor). As you can see from Figure 1.4, recent trends affect every cohort, but emerging adults are much more likely to be influenced by current trends than any older cohort, even the one immediately preceding them.

Sometimes demographic characteristics rather than current events reflect the historical context. For example, the baby boomers, those born between 1946 and 1964, are experiencing quite a different late adulthood than did earlier cohorts because there are so many of them. Their numbers have already led to an increase in the age at which a person qualifies for Social Security benefits in the United States; similar changes have been made to social programs in many other nations.

By contrast, the current cohort of young adults is relatively small, and their birth rate is low. That means they will have fewer children and grandchildren when they are older—perhaps a blessing, perhaps not, but certainly this trend represents a cohort change.

TABLE 1.2 Popular First Names Since 1932

Girls:
2012: Sophia, Emma, Isabella, Olivia, Ava
1992: Ashley, Jessica, Amanda, Brittany, Sarah
1972: Jennifer, Michelle, Lisa, Kimberly, Amy
1952: Linda, Mary, Patricia, Deborah, Susan
1932: Mary, Betty, Barbara, Dorothy, Joan
Boys:
2012: Jacob, Mason, Ethan, Noah, William
1992: Michael, Christopher, Matthew, Joshua, Andrew
1972: Michael, Christopher, James, David, John
1952: James, Robert, John, Michael, David
1932: Robert, James, John, William, Richard
Source: U.S. Social Security Administration

"Hey! Elbows off the table."

Twenty-First-Century Manners If he obeyed his father but kept texting, would Emily Post be pleased?

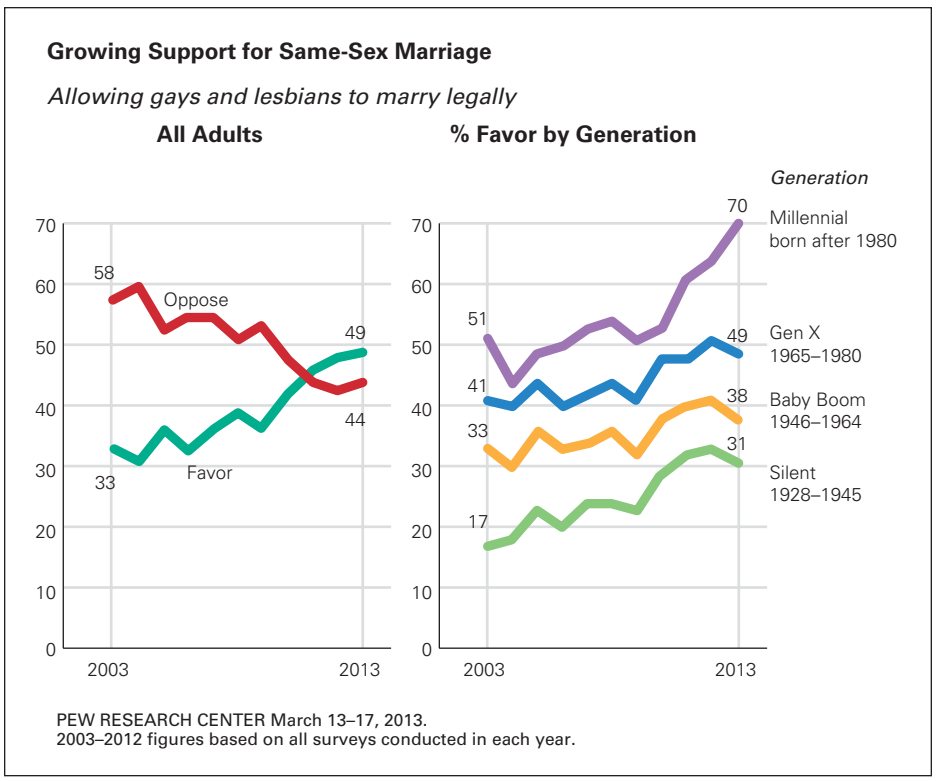


FIGURE 1.4

Same-Sex Marriage and Different Ages Support for making same-sex marriage legal shows both cohort and period effects. If the data were only from the population of all ages, not quite half are in favor. But cohort analysis reveals a generational shift, with dramatic trends among the young, much less among the rest.