



The Life Span

Human Development for Helping Professionals

PATRICIA C. BRODERICK

PAMELA BLEWITT



FIFTH EDITION

Fifth Edition

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Dedication

For Connor, Owen, Wesley, and Will.

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Preface

What's New in This Edition?

The first and most comprehensive developmental textbook written specifically for helping professionals, *The Life Span: Human Development for Helping Professionals* is now in its fifth edition. Major changes and new features include:

- New introductory vignettes in each chapter that help students to see the relevance of chapter content for their own lives and those of the people they serve.
- Clear and comprehensive coverage of emerging data on the biological and neuropsychological underpinnings of development.
- Revamped and extended explanations of the nature of stress, its role in development, and its effects on behavior at every life stage.
- New figures and tables throughout the text that summarize and organize large amounts of data and/or provide accessible information about programs and interventions. For example, Chapter 5 presents a table listing some skills taught in parent training programs, and a table in Chapter 9 gives students pointers on ways to communicate with transgender youth.
- Expanded coverage of the best empirical work on the implications for development of cultural, ethnic, and socioeconomic contexts.
- New topics with special importance to helping professionals in every chapter. Examples include the nature of translational research (Chapter 1), the consequences of bilingual child rearing (Chapter 3), the development of children's lying (Chapters 7), bullies and victims (Chapter 7), the differential development of self-esteem, self-efficacy, and narcissism (Chapter 7), the impact of praise on self-development (Chapter 7), gender nonconformity and ways of helping sexual minority youth (Chapters 8 and 9), parental monitoring of teens (Chapter 10), the "hook-up" culture (Chapter 12), a narrative approach to career counseling (Chapter 12), promoting well-being in adulthood (Chapter 14), and many others.
- Fully updated research and applications to practice in all chapters.

The Conceptual Framework of This Book

The study of human development over the life span reveals the fascinating story of human beings and how they change over time. The story is both universal and uniquely personal, because it speaks to us about ourselves and the people who are important in our lives. Besides being intrinsically interesting, knowledge about development has

obvious relevance for professionals engaged in psychology, counseling, education, social work, and other helping and health-related fields. We believe that in order to understand the strengths and challenges of our clients or students, we must see them in context. One important context is developmental history. As helping professionals, we must take into account the threads of continuity and change in people's lives that bring them to their present point in development. This text provides the background and the tools to enable professionals to view their clients from a developmental perspective.

This text also reflects the contemporary view that life span development is a process deeply embedded within and inseparable from the context of family, social network, and culture. People do not progress through life in isolation; rather, their developmental course influences and is influenced by other people and systems. Some of these forces are related to the cultural differences that exist in a world of increasing diversity. We recognize the importance of these factors in understanding human development and emphasize cultural and systemic influences on human growth and change throughout the book.

We would also be remiss if we neglected to emphasize the rapidly growing body of knowledge from neuroscience that is refining our appreciation of how biology and context interact. The marriage of "nature and nurture" and our greater awareness of how they interrelate contribute significantly to a more fully informed understanding of how people change over the life course. This emphasis, which has been strengthened in this new edition, provides an overarching template for practitioners to use in understanding development and in applying developmental knowledge to their work.

Research and applications within the field of human development are becoming more and more interdisciplinary with expanding links to health, social processes, well-being, and so forth. This can make it exceptionally difficult to summarize this dynamic field. Presumably, every author of a book of this nature needs to make some choices about what to include. This particular text is configured to emphasize selected theories and research that have useful applications for helping professionals. A main purpose of this book is to provide students in the helping professions with information that can be translated into professional "best practice" applications. To this end, we have tried to use the most current research available to summarize domains of knowledge that remain, essentially, fields "under investigation." Science by its very nature continually evolves in its efforts to reveal the nature of human experience. Thus, one of the assumptions we continue to emphasize in this edition is the importance of reflective practice for helping professionals.

Reflective practice involves "active, persistent, and careful consideration of any belief or supposed form of

knowledge in light of the grounds that support it and the further conclusions to which it leads" (Dewey, 1933/1998, p. 9). Our primary vehicle for accomplishing this goal is twofold: (1) encouraging the reader to reflect on personal experience and assumptions about development, and (2) communicating the value of research-based knowledge as a means of understanding human development. Our particular orientation intentionally emphasizes the significance of developmental research to the work of the professional helper. We attempt to integrate various lines of developmental research into a useful whole that has practical value for helpers in applied settings. This book bears witness to the enormous amount of work done by developmental researchers, particularly in the last several decades. Without their groundbreaking contributions, helping professionals' efforts to improve people's lives would be greatly impoverished. It has been a challenge and an honor to record their contributions in this book.

Coverage and Organization

The opening chapters establish the theme of the text and introduce broad issues in development. Chapter 1 begins with an examination of the role of developmental knowledge in reflective practice. Students are introduced to classic and contemporary theoretical models and to issues that appear and reappear throughout the text. They are encouraged to reflect on their own theoretical assumptions about development and on the impact those assumptions could have in practice. Students are introduced to developmental psychopathology in a focus feature, where they can learn about prevention science and its connection to developmental research.

Chapter 2 takes a close look at the coaction of genetic and environmental factors in the development of all aspects of the human organism. Students are introduced to genetic mechanisms in the context of epigenesis, the control of genetic expression by forces beyond the genes themselves. Sections on atypical early developments and on early brain development highlight the coaction of many genetic and environmental factors in prenatal and early postnatal development. Students are also introduced to the concept of development as adaptation and to the critical stress and adaptation system. Students emerge with an understanding of how biology and experience together craft this system and determine healthy and unhealthy outcomes.

The remaining chapters follow a chronological sequence, covering a full range of critical topics in physical, cognitive, social, and emotional development. In Chapters 3 through 5, the infancy and preschool periods are the focus. Among the topics covered are the many aspects of early cognitive growth, such as the development of representational thought and memory, executive functions, early "theory of mind" or naive psychology, the early understanding

of symbols and of language, and more. Coverage of early social development includes the emergence of emotions, emotion regulation, attachment processes, early self-development, temperament, and the role of parental disciplinary style in the growth of self-regulation.

Chapters 6, 7, and 8 examine important developments in middle childhood and in the transition to adolescence, including the growth of logical thinking, the expanding capacity to process and remember information, perspective taking skills and friendship development, influences on cognitive functioning, such as teacher and school characteristics, influences on the developing self-concept, developments in moral thinking, influences on the emergence of prosocial and antisocial behavior, gender-role development, and peer relationships. The impact of culture and context for many of these developments, such as self-concept, are highlighted.

Adolescence is the subject of Chapters 9 and 10, covering pubertal change, advances in logical and metacognitive skill, changes to the brain and stress system, identity development, sexual orientation, risk taking, and the influences of biology, peers, parents, school, media, and culture on adolescent behavior. Chapters 11 and 12 describe the young adult period, or what has been called “emerging adulthood,” and include a close look at the way thinking changes as adulthood looms and at the progress of work, career, and intimate relationships.

Chapters 13, 14, and 15 are concerned with developmental processes in middle and late adulthood. Chapter 13 focuses on changes in physical, cognitive, and social functioning during the middle adult years. Chapter 14 considers the questions that all middle adults face: What constitutes a well-lived life, and how do normally functioning adults cope with the enormous demands, progress, and setbacks that adult life brings? Finally, Chapter 15 reviews the challenges and developmental processes involved in late adulthood and end-of-life experiences. These chapters examine the many kinds of change that adults experience and the maintenance of well-being in the face of loss. Among the key developmental tasks discussed are marriage and its discontents, the experience of child rearing, spirituality, coping and health, the role of wisdom, stereotypes about aging, facing death and bereavement, and many more.

Features and Highlights

- **Depth of coverage:** Because the book is designed for graduate and advanced undergraduate students, most topics, especially those that have special relevance to helping professionals, are covered in greater depth than in a typical life span text. The expanded coverage of research in specific areas will enhance students’ understanding of the scientific basis for applications.
- **Applications:** Blending empirically supported information about treatments with the issues covered in each chapter, these revised and expanded sections offer extensive discussion of how developmental science can inform practice. Applications sections include new and expanded topics such as preventing child maltreatment, prenatal and postnatal maternal depression, managing sibling rivalry and other common problems of early childhood, improving children’s executive functions, advancing children’s social-emotional learning, reducing hostile attributional bias, helping sexual minority youth, family therapy with adolescents, helping college students develop critical thinking skills, narrative approaches to career counseling, and fostering adult wellness, among many others.
- **Focus on Developmental Psychopathology:** In many chapters, sections on psychopathology trace the developmental roots of autism, attachment disorders, conduct problems, depression, eating disorders, and PTSD. These specific disorders were selected because each represents an example of how developmental processes interact to produce psychopathology. Linkages between normal and abnormal pathways of development are explained. A review of basic concepts of developmental psychopathology and prevention science is also included.
- **Boxed features:** In many chapters, boxes highlight special topics and provide opportunities for in-depth coverage of research. These may be the biographies of influential theorists or detailed examinations of issues such as how adversity alters child outcomes, children’s credibility as eyewitnesses, issues facing children of immigrant families, the effects of divorce on children, the criminal culpability of juveniles, identity processes in multiracial individuals, gay and lesbian couples and their families, gender differences in STEM fields, leadership development in women and men, the burden of caring for elderly relatives, cross-cultural differences in funeral rituals, and many others.
- **Culture and gender:** In every chapter, cross-cultural and cross-gender issues are discussed wherever relevant developmental research is available. Many tables examine cultural differences, such as in parenting, in identity development, and in coping strategies.
- **Chapter summaries:** Every chapter ends with a summary of the major topics covered in that chapter, providing a study tool for students and a planning tool for instructors.
- **Case studies and case study discussion questions:** Case studies and questions at the end of each chapter are another set of pedagogical tools for helping students think about the clinical implications of the developmental facts and theories they have learned.

- **Journal questions:** Journal questions at the end of each chapter help students reflect on the issues they have read about, encouraging them to consider the relevance of these issues in their own development. They also provide instructors an additional resource for generating class discussion.
- **Key concepts:** Throughout the text, new or technical terms are printed in **bold** and defined. At the end of each chapter, a list of these key terms is provided as a study tool.
- **Glossary:** A glossary at the end of the text provides students with a handy reference for key terms.
- **Appendix:** An appendix helps students understand how developmental processes are studied scientifically and how scientifically established information can be useful in practice.
- **Writing style:** The writing style is conversational in tone and is aimed at making even complex material accessible. To avoid sexist language use and yet still have the luxury of using singular pronouns such as “she” and “he,” we use feminine pronouns in odd-numbered chapters and masculine pronouns in even-numbered chapters.

Supplemental Materials

Two online supplements are available for instructors at www.pearsonhighered.com/educator. Simply enter the author, title, or ISBN and select this textbook. Click on the “Resources” tab to view and download the available supplements.

- **Online Instructor’s Manual and Test Bank:** A new Online Instructor’s Manual and Test Bank (ISBN: 0-13-520616-2) has been developed with an average of 30 multiple-choice test items and 3 to 5 essay-style questions per chapter. Carefully scrutinized for accuracy, the multiple-choice questions in the Test Bank include both lower-level and higher-level questions. The lower-level questions expect students to access content knowledge and comprehension; the higher-level questions assess students’ ability to synthesize, compare and contrast, and apply their knowledge to problem solving.
- **Online PowerPoint® Slides:** The Online PowerPoint® slides (ISBN: 0-13-520613-8) include key concept summaries, outlines, and other graphic aids to enhance learning. These slides are designed to help students understand, organize, and remember concepts and developmental theories.

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Chapter 1

Organizing Themes in Development



Learning Objectives

After reading this chapter, you should be able to:

- 1.1** Explain the role of developmental science (research and theory) in the problem-solving processes of reflective practitioners.
- 1.2** Identify distinguishing characteristics and core issues of classic theoretical approaches in developmental science, particularly classic stage theories and incremental theories.
- 1.3** Explain how and why contemporary multidimensional developmental theories synthesize the extreme positions of classic theorists and assess advantages and disadvantages of using multidimensional approaches.
- 1.4** Identify three core developmental issues and contrast current research-based conclusions with classic assumptions on each core issue.

Mai is a 56-year-old woman who was born to a poor Vietnamese immigrant family in rural California. When Mai was 5, her parents moved the family to a large city where they eventually succeeded in building a stable business that provided an adequate income. Mai was typically quiet and shy, and she had difficulty making friends in elementary school, often feeling left out of her peers' activities. Her social life improved in adolescence, but she often felt the need to hide her outstanding academic skills in order to fit in. In college and medical school, Mai felt more accepted for her intellectual prowess and freer to be herself, but she still ruminated at times about what others thought of her, and was plagued by vague anxieties. By her mid-twenties, cyclical problems with depression and anxiety had become a part of her existence. Her marriage at 33 to a scholarly man provided a haven for her, and life seemed calmer and less frightening. After the birth of a son at age 38, Mai again felt overwhelmed by anxiety. The couple struggled to balance the complex needs of a fragile infant with their own careers, and Mai's husband found her heavy dependence on his attention and calming influence difficult to accommodate. As their son grew, however, the couple handled the balancing act more skillfully. Now, Mai's child is starting college. Mai is busy with her work and usually finds her anxiety manageable. She continues to view her husband as the steady force in her life.

Mai's story raises a host of questions about the influences that have shaped her life. How important was Mai's early poverty, her cultural background, and her

parents' immigrant status? What was the source of her early social inhibition? Would things have been different for her if her parents had not been able to eventually provide economic stability? Were Mai's early difficulties forming social relationships just a "stage," or were they foundational to her later problems with depression and anxiety? Did stereotype threat (expecting to be judged on the basis of ethnicity or gender) play a role? How unusual is it for a married couple to experience increased conflicts following the birth of a child? If Mai and her husband had divorced, would their child have suffered lasting emotional damage? Is Mai's intellectual ability likely to change as she continues to age? Are her emotional problems likely to increase or decrease? What factors enable any person to overcome early unfavorable experiences and become a successful, healthy adult? And conversely, why do some people who do well as children experience emotional or behavioral problems as adults? These intriguing questions represent a sampling of the kinds of topics that developmental scientists tackle. Their goal is to understand **life span development**: human behavioral change from conception to death. "Behavioral" change refers broadly to change in both observable activity (e.g., from crawling to walking) and mental activity (e.g., from disorganized to logical thinking). More specifically, developmental science seeks to

- describe people's behavioral characteristics at different ages,
- identify how people are likely to respond to life's experiences at different ages,
- formulate theories that explain how and why we see the typical characteristics and responses that we do,
- understand what factors contribute to developmental differences from one person to another, and
- understand how behavior is influenced by cultural context and by changes in culture across generations.

Using an array of scientific tools designed to obtain objective (unbiased) information, developmentalists make careful observations and measurements, and they test theoretical explanations empirically. The Appendix, *A Practitioner's Guide to the Methods of Developmental Science*, provides a guide to these techniques. An understanding of the processes that lead to objective knowledge will help you evaluate new information from any source as you move forward in your career as a practitioner.

Developmental science is not a remote or esoteric body of knowledge. Rather, it has much to offer helping professionals in both their careers and their personal lives. As you study developmental science, you will build a knowledge base of information about age-related behaviors and about causal theories that help organize and make sense of these behaviors. These tools will help you better understand client concerns that are rooted in shared human experience. And when you think about clients' problems from a developmental perspective, you will increase the range of problem-solving strategies that you can offer. Finally, studying development can facilitate personal growth by providing a foundation for reflecting on your own life.

Reflection and Action

1.1 Explain the role of developmental science (research and theory) in the problem-solving processes of reflective practitioners.

Despite strong support for a comprehensive academic grounding in scientific developmental knowledge for helping professionals (e.g., Van Hesteren & Ivey, 1990), there has been a somewhat uneasy alliance between practitioners, such as mental health professionals, and those with a more empirical bent, such as behavioral scientists. The clinical fields have depended on research from developmental psychology

to inform their practice. Yet in the past, overreliance on traditional experimental methodologies sometimes resulted in researchers' neglect of important issues that could not be studied using these rigorous methods (Hetherington, 1998). Consequently, there was a tendency for clinicians to perceive some behavioral science literature as irrelevant to real-world concerns (Turner, 1986). Clearly, the gap between science and practice is not unique to the mental health professions. Medicine, education, and law have all struggled with the problems involved in preparing students to grapple with the complex demands of the workplace. Contemporary debate on this issue has led to the development of serious alternative paradigms for the training of practitioners.

One of the most promising of these alternatives for helping professionals is the concept of **reflective practice**. The idea of "reflectivity" derives from Dewey's (1933/1998) view of education, which emphasized careful consideration of one's beliefs and forms of knowledge as a precursor to practice. Donald Schon (1987), a pioneer in the field of reflective practice, describes the problem this way:

In the varied topography of professional practice, there is a high, hard ground overlooking a swamp. On the high ground, manageable problems lend themselves to solution through the application of research-based theory and technique. In the swampy lowland, messy confusing problems defy technical solutions. The irony of this situation is that the problems of the high ground tend to be relatively unimportant to individuals or society at large, however great their technical interest may be, while in the swamp lie the problems of greatest human concern. (p. 3)

The Gap Between Science and Practice

Traditionally, the modern, university-based educational process has been driven by the belief that problems can be solved best by applying objective, technical, or scientific information amassed from laboratory investigations. Implicit in this assumption is that human nature operates according to universal principles that, if known and understood, will enable us to predict behavior. For example, if I understand the principles of conditioning and reinforcement, I can apply a contingency contract to modify my client's inappropriate behavior. Postmodern critics have pointed out the many difficulties associated with this approach. Sometimes a "problem" behavior is related to, or maintained by, neurological, systemic, or cultural conditions. Sometimes the very existence of a problem may be a cultural construction. Unless a problem is viewed within its larger context, a problem-solving strategy may prove ineffective.

Most of the situations helpers face are confusing, complex, ill defined, and often unresponsive to the application of a simple, specific set of scientific principles. Thus, the training of helping professionals often involves a "dual curriculum." The first is more formal and may be presented as a conglomeration of research-based facts, whereas the second, often learned in a practicum, field placement, or first job, covers the curriculum of "what is really done" when working with clients. Unfortunately, some practitioners lose sight of the value of research-based knowledge in this process. The antidote to this dichotomous pedagogy, Schon (1987) and his followers suggest, is reflective practice. This is a creative method of thinking about practice in which the helper masters the knowledge and skills base pertinent to the profession but is encouraged to go beyond rote technical applications to generate new kinds of understanding and strategies of action. Rather than relying solely on objective technical applications to determine ways of operating in a given situation, the reflective practitioner constructs solutions to problems by engaging in personal hypothesis generating and hypothesis testing. Reflective practices are now used across a wide range of helping professions, from counseling and psychology to education to medicine and nursing (Curtis, Elkins, Duran, & Venta, 2016).

How can you use the knowledge of developmental science in a meaningful and reflective way? What place does it have in the process of reflective construction?

A consideration of another important line of research, namely, that of characteristics of expert problem solvers, will help us answer this question. Research studies on expert–novice differences in many areas such as teaching, science, and athletics all support the contention that experts have a great store of knowledge and skill in a particular area. Expertise is domain-specific. When compared to novices in any given field, experts possess well-organized and integrated stores of information that they draw on, almost automatically, when faced with novel challenges. Because this knowledge is well practiced, truly a “working body” of information, retrieval is relatively easy (Lewandowsky & Thomas, 2009). Progress in problem solving is closely self-monitored. Problems are analyzed and broken down into smaller units, which can be handled more efficiently.

If we apply this information to the reflective practice model, you will see some connections. One core condition of reflective practice is that practitioners use theory as a “partial lens through which to consider a problem” (Nelson & Neufelt, 1998). Practitioners also use another partial lens: their professional and other life experience. In reflective practice, theory-driven hypotheses about client and system problems are generated and tested for goodness of fit. A rich supply of problem-solving strategies depends on a deep understanding of and thorough grounding in fundamental knowledge germane to the field. Notice that there is a sequence to reflective practice. Schon (1987), for example, argues against putting the cart before the horse. He states that true reflectivity depends on the ability to “recognize and apply standard rules, facts and operations; then to reason from general rules to problematic cases in ways characteristic of the profession; and only then to develop and test new forms of understanding and action where familiar categories and ways of thinking fail” (p. 40). In other words, background knowledge is important, but it is most useful in a dynamic interaction with contextual applications. The most effective helpers can shift flexibly between the “big picture” that their knowledge base provides and the unique problems and contexts that they confront in practice (Ferreira, Basseches, & Vasco, 2016). A working knowledge of human development supplies the helping professional with a firm base from which to proceed.

Given the relevance of background knowledge to expertise in helping and to reflective practice, we hope we have made a sufficiently convincing case for the study of developmental science. However, it is obvious that students approaching this study are not “blank slates.” You already have many ideas and theories about the ways that people grow and change. These implicit theories have been constructed over time, partly from personal experience, observation, and your own cultural “take” on situations. Dweck and her colleagues have demonstrated that reliably different interpretations of situations can be predicted based on individual differences in people’s implicit beliefs about certain human attributes, such as intelligence or personality (see Dweck, 2006, 2017). Take the case of intelligence. If you happen to hold the implicit belief that a person’s intellectual capacity can change and improve over time, you might be more inclined to take a skill-building approach to some presenting problem involving knowledge or ability. However, if you espouse the belief that a person’s intelligence is fixed and not amenable to incremental improvement, possibly because of genetic inheritance, you might be more likely to encourage a client to cope with and adjust to cognitive limitations. For helping professionals, the implicit theoretical lens that shapes their worldview can have important implications for their clients.

We are often reluctant to give up our personal theories even in the face of evidence that these theories are incorrect (Lewandowsky & Oberauer, 2016; Rousseau & Gunia, 2016). The critical thinking that reflective practice requires can be impaired for many reasons, especially if we are busy and feel overwhelmed by the demands of the moment. The best antidote to misapplication of our personal views is self-monitoring: being aware of what our theories are and recognizing that they are only one of a set of possibilities. (See Chapter 11 for a more extensive discussion of this issue.) Before we discuss some specific beliefs about the nature of development, take a few minutes to consider what you think about the questions posed in Box 1.1.

Box 1.1: Questionnaire

Examine Your Beliefs About Development

Rate yourself using the forced-choice format for each of the following items.

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Physical characteristics such as eye color, height, and weight are primarily inherited through genes. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 2. Intelligence is primarily inherited through genes. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 3. Personality is primarily inherited through genes. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 4. Events in the first 3 years of life have permanent effects on a person's psychological development. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 5. People's personalities do not change very much over their lifetimes. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 6. People all go through the same stages in their lives. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 7. Parents' socialization practices are the primary determiners of their children's mental health. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 8. The cultural context in which the individual lives profoundly affects the psychological development of that person. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |
| 9. Common sense is a better guide to child rearing than is scientific knowledge. | ☐ | ☐ | ☐ | ☐ |
| | Strongly Disagree | Moderately Disagree | Moderately Agree | Strongly Agree |

A Historical Perspective on Developmental Theories

1.2 Identify distinguishing characteristics and core issues of classic theoretical approaches in developmental science, particularly classic stage theories and incremental theories.

Now that you have examined some of your own developmental assumptions, let's consider the theoretical views that influence developmentalists, with special attention to how these views have evolved through the history of developmental science. Later, we will examine how different theoretical approaches might affect the helping process.

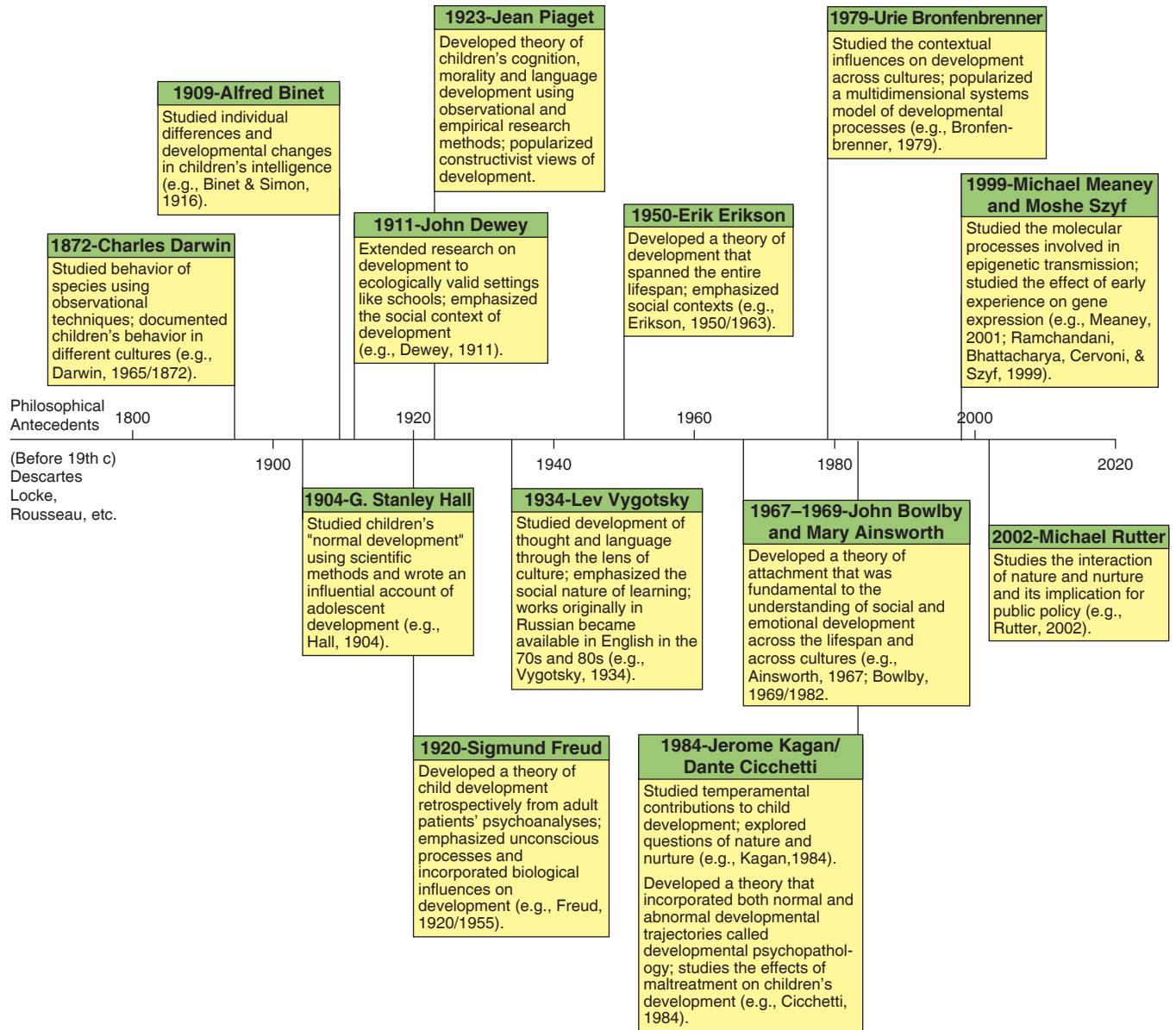
Like you, developmental scientists bring to their studies theoretical assumptions that help to structure their understanding of known facts. These assumptions also

guide their research and shape how they interpret new findings. Scientists tend to develop theories that are consistent with their own cultural background and experience; no one operates in a vacuum. A core value of Western scientific method is a pursuit of objectivity, so that scientists are committed to continuously evaluating their theories in light of evidence. As a consequence, scientific theories change over time. Throughout this text, you will be introduced to many developmental theories. Some are broad and sweeping in their coverage of whole areas of development, such as Freud's theory of personality development (see Chapters 7 and 8) or Piaget's theory of cognitive development (see Chapters 3, 6, and 9); some are narrower in scope, focusing on a particular issue, such as Vygotsky's theory of the enculturation of knowledge (see Chapter 3) or Bowlby's attachment theory (see Chapters 4 and 12). You will see that newer theories usually incorporate empirically verified ideas from older theories. Scientific theories of human development began to emerge in Europe and America in the 19th century. They had their roots in philosophical inquiry, in the emergence of biological science, and in the growth of mass education that accompanied industrialization. Throughout medieval times in European societies, children and adults of all ages seem to have been viewed and treated in very similar ways (Aries, 1960). Only infants and preschoolers were free of adult responsibilities, although they were not always given the special protections and nurture that they are today. At age 6 or 7, children took on adult roles, doing farmwork or learning a trade, often leaving their families to become apprentices. As the Industrial Revolution advanced, children worked beside adults in mines and factories. People generally seemed "indifferent to children's special characteristics" (Crain, 2005, p. 2), and there was no real study of children or how they change.

The notion that children only gradually develop the cognitive and personality structures that will characterize them as adults first appeared in the writings of 17th- and 18th-century philosophers, such as John Locke in Great Britain and Jean-Jacques Rousseau in France. In the 19th century, Charles Darwin's theory of the evolution of species and the growth of biological science helped to foster scholarly interest in children. The assumption grew that a close examination of how children change might help advance our understanding of the human species. Darwin himself introduced an early approach to child study, the "baby biography," writing a richly detailed account of his young son's daily changes in language and behavior. By the 18th and 19th centuries, the Industrial Revolution led to the growth of "middle-class" occupations (e.g., merchandizing) that required an academic education: training in reading, writing, and math. The need to educate large numbers of children sharpened the public's interest in understanding how children change with age.

The first academic departments devoted to child study began to appear on American college campuses in the late 19th and early 20th centuries. The idea that development continues even in adulthood was a 20th-century concept and a natural outgrowth of the study of children. If children's mental and behavioral processes change over time, perhaps such processes continue to evolve beyond childhood. Interest in adult development was also piqued by dramatic increases in life expectancy in the 19th and 20th centuries, as well as cultural changes in how people live. Instead of single households combining three or four generations of family members, grandparents and other relatives began to live apart from "nuclear families," so that understanding the special needs and experiences of each age group took on greater importance. Most classic developmental theories emerged during the early and middle decades of the 20th century. Contemporary theories integrate ideas from many classic theories, as well as from other disciplines: modern genetics, neuroscience, cognitive science, psycholinguistics, anthropology, and social and cultural psychology. They acknowledge that human development is a complex synthesis of diverse processes at multiple levels of functioning. Because they embrace complexity, contemporary developmental theories can be especially useful to helping professionals (Melchert, 2016). See the timeline in Figure 1.1 for a graphic summary of some of the key theories and ideas in the history of developmental science.

You can expect that the most up-to-date theories you read about in this text will continue to change in the future, because theoretical ideas evolve as research testing

FIGURE 1.1 Timeline of selected influences on developmental science with dates of representative works.

them either supports or does not support them. But theories are also likely to need adjusting because global shifts in immigration patterns, climate, and access to technology and information are likely to modify behavior and perhaps even some of the processes that govern the development of behavior. Developmental theories must accommodate such changes (Jensen, 2012).

Emphasizing Discontinuity: Classic Stage Theories

Some of the most influential early theories of development described human change as occurring in stages. Imagine a girl when she is 4 months old and then again when she is 4 years old. If your sense is that these two versions of the same child are fundamentally different in kind, with different intellectual capacities, different emotional structures, or different ways of perceiving others, you are thinking like a stage theorist. A **stage** is a period of time, perhaps several years, during which a person's activities (at least in one broad domain) have certain characteristics in common. For example, we could say that in language development, the 4-month-old girl is in a preverbal stage:

Among other things, her communications share in common the fact that they do not include talking. As a person moves to a different stage, the common characteristics of behavior change. In other words, a person's activities have similar qualities within stages but different qualities across stages. Also, after long periods of stability, qualitative shifts in behavior seem to happen relatively quickly. For example, the change from not talking to talking seems abrupt or discontinuous. It tends to happen between 12 and 18 months of age, and once it starts, language use seems to advance very rapidly. A 4-year-old is someone who communicates primarily by talking; she is clearly in a verbal stage.

The preverbal to verbal example illustrates two features of stage theories. First, they describe development as qualitative or transformational change, like the emergence of a tree from a seed. At each new stage, new forms of behavioral organization are both different from and more complex than the ones at previous stages. Increasing complexity suggests that development has “directionality.” There is a kind of unfolding or emergence of behavioral organization.

Second, they imply periods of relative stability (within stages) and periods of rapid transition (between stages). Metaphorically, development is a staircase. Each new stage lifts a person to a new plateau for some period of time, and then there is another steep rise to another plateau. There seems to be discontinuity in these changes rather than change being a gradual, incremental process. One person might progress through a stage more quickly or slowly than another, but the sequence of stages is usually seen as the same across cultures and contexts, that is, universal. Also, despite the emphasis on qualitative discontinuities between stages, stage theorists argue for functional continuities across stages. That is, the same processes drive the shifts from stage to stage, such as brain maturation and social experience.

Sigmund Freud's theory of personality development began to influence developmental science in the early 1900s and was among the first to include a description of stages (e.g., Freud, 1905/1989, 1949/1969). Freud's theory no longer takes center stage in the interpretations favored by most helping professionals or by developmental scientists. First, there is little evidence for some of the specific proposals in Freud's theory (Loevinger, 1976). Second, his theory has been criticized for incorporating the gender biases of early 20th-century Austrian culture. Yet, some of Freud's broad insights are routinely accepted and incorporated into other theories, such as his emphasis on the importance of early family relationships to infants' emotional life, his notion that some behavior is unconsciously motivated, and his view that internal conflicts can play a primary role in social functioning. Currently influential theories, like those of Erik Erikson and John Bowlby, incorporated some aspects of Freud's theories or were developed to contrast with Freud's ideas. For these reasons, it is important to understand Freud's theory. Also, his ideas have permeated popular culture, and they influence many of our assumptions about the development of behavior. As you work to make explicit your own implicit assumptions about development, it will help to understand their origins and how well the theories that spawned them stand up in the light of scientific investigation.

FREUD'S PERSONALITY THEORY

Sigmund Freud's **psychoanalytic theory** both describes the complex functioning of the adult personality and offers an explanation of the processes and progress of its development throughout childhood. To understand any given stage it helps to understand Freud's view of the fully developed adult.

Id, Ego, and Superego. According to Freud, the adult personality functions as if there were actually three personalities, or aspects of personality, all potentially in conflict with one another. The first, the **id**, is the biological self, the source of all psychic energy. Babies are born with an id; the other two aspects of personality develop later. The id blindly pursues the fulfillment of physical needs or “instincts,” such as the hunger drive and the sex drive. It is irrational, driven by the **pleasure principle**, that is, by the pursuit of gratification. Its function is to keep the individual, and the species, alive, although Freud also proposed that there are inborn aggressive, destructive instincts served by the id.

The **ego** begins to develop as cognitive and physical skills emerge. In Freud's view, some psychic energy is invested in these skills, and a rational, realistic self begins to take shape. The id still presses for fulfillment of bodily needs, but the rational ego seeks to meet these needs in sensible ways that take into account all aspects of a situation. For example, if you were hungry, and you saw a child with an ice cream cone, your id might press you to grab the cone away from the child—an instance of blind, immediate pleasure seeking. Of course, stealing ice cream from a child could have negative consequences if someone else saw you do it or if the child reported you to authorities. Unlike your id, your ego would operate on the **reality principle**, garnering your understanding of the world and of behavioral consequences to devise a more sensible and self-protective approach, such as waiting until you arrive at the ice cream store yourself and paying for an ice cream cone.

The **superego** is the last of the three aspects of personality to emerge. Psychic energy is invested in this “internalized parent” during the preschool period as children begin to feel guilty if they behave in ways that are inconsistent with parental restrictions. With the superego in place, the ego must now take account not only of instinctual pressures from the id, and of external realities, but also of the superego's constraints. It must meet the needs of the id without upsetting the superego to avoid the unpleasant anxiety of guilt. In this view, when you choose against stealing a child's ice cream cone to meet your immediate hunger, your ego is taking account not only of the realistic problems of getting caught but also of the unpleasant feelings that would be generated by the superego.

The Psychosexual Stages. In Freud's view, the complexities of the relationships and conflicts that arise among the id, the ego, and the superego are the result of the individual's experiences during five developmental stages. Freud called these **psychosexual stages** because he believed that changes in the id and its energy levels initiated each new stage. The term *sexual* here applies to all biological instincts or drives and their satisfaction, and it can be broadly defined as “sensual.”

For each stage, Freud posited that a disproportionate amount of id energy is invested in drives satisfied through one part of the body. As a result, the pleasure experienced through that body part is especially great during that stage. Children's experiences satisfying the especially strong needs that emerge at a given stage can influence the development of personality characteristics throughout life. Freud also thought that parents typically play a pivotal role in helping children achieve the satisfaction they need. For example, in the **oral stage**, corresponding to the first year of life, Freud argued that the mouth is the body part that provides babies with the most pleasure. Eating, drinking, and even nonnutritive sucking are presumably more satisfying than at other times of life. A baby's experiences with feeding and other parenting behaviors are likely to affect her oral pleasure, and could influence how much energy she invests in seeking oral pleasure in the future. Suppose that a mother in the early 20th century believed the parenting advice of “experts” who claimed that nonnutritive sucking is bad for babies. To prevent her baby from sucking her thumb, the mother might tie the baby's hands to the sides of the crib at night—a practice recommended by the same experts! Freudian theory would predict that such extreme denial of oral pleasure could cause an **oral fixation**: The girl might grow up needing oral pleasures more than most adults, perhaps leading to overeating, to being especially talkative, or to being a chain smoker. The grown woman might also exhibit this fixation in more subtle ways, maintaining behaviors or feelings in adulthood that are particularly characteristic of babies, such as crying easily or experiencing overwhelming feelings of helplessness. According to Freud, fixations at any stage could be the result of either denial of a child's needs, as in this example, or overindulgence of those needs. Specific defense mechanisms, such as “reaction formation” or “repression,” can also be associated with the conflicts that arise at a particular stage.

In Table 1.1, you will find a summary of the basic characteristics of Freud's five psychosexual stages. Some of these stages will be described in more detail in later chapters. Freud's stages have many of the properties of **critical (or sensitive) periods** for personality development. That is, they are time frames during which certain developments must occur or can most fully form. Freud's third stage, for example,

TABLE 1.1 Freud's Psychosexual Stages of Development

STAGE	APPROXIMATE AGE	DESCRIPTION
Oral	Birth to 1 year	Infants develop special relationships with caregivers. Mouth is the source of greatest pleasure. Too much or too little oral satisfaction can cause an "oral fixation," leading to traits that actively (smoking) or symbolically (overdependency) are oral or infantile.
Anal	1 to 3 years	Anal area is the source of greatest pleasure. Harsh or overly indulgent toilet training can cause an "anal fixation," leading to later adult traits that recall this stage, such as being greedy or messy.
Phallic	3 to 5 or 6 years	Genitalia are the source of greatest pleasure. Sexual desire directed toward the opposite-sex parent makes the same-sex parent a rival. Fear of angering the same-sex parent is resolved by identifying with that parent, which explains how children acquire both sex-typed behaviors and moral values. If a child has trouble resolving the emotional upheaval of this stage through identification, sex role development may be deviant or moral character may be weak.
Latency	6 years to puberty	Relatively quiescent period of personality development. Sexual desires are repressed after the turmoil of the last stage. Energy is directed into work and play. There is continued consolidation of traits laid down in the first three stages.
Genital	Puberty through adulthood	At puberty, adult sexual needs become the most important motivators of behavior. The individual seeks to fulfill needs and expend energy in socially acceptable activities, such as work, and through marriage with a partner who will substitute for the early object of desire, the opposite-sex parent.

provides an opportunity for sex typing and moral processes to emerge (see Table 1.1). Notice that Freud assumed that much of personality development occurs before age 5, during the first three stages. This is one of the many ideas from Freud's theory that has made its way into popular culture, even though modern research clearly does not support this position.

By the mid-1900s, two other major stage theories began to significantly impact the progress of developmental science. The first, by Erik Erikson, was focused on personality development, reshaping some of Freud's ideas. The second, by Jean Piaget, proposed that there are stagelike changes in cognitive processes during childhood and adolescence, especially in rational thinking and problem solving.

ERIKSON'S PERSONALITY THEORY

Erik Erikson studied psychoanalytic theory with Anna Freud, Sigmund's daughter, and later proposed his own theory of personality development (e.g., Erikson, 1950/1963). Like many "neo-Freudians," Erikson deemphasized the id as the driving force behind all behavior, and he emphasized the more rational processes of the ego. His theory is focused on explaining the psychosocial aspects of behavior: attitudes and feelings toward the self and toward others. Erikson described eight **psychosocial stages**. The first five correspond to the age periods laid out in Freud's psychosexual stages, but the last three are adult life stages, reflecting Erikson's view that personal identity and interpersonal attitudes are continually evolving from birth to death.

The "Eight Stages of Man." In each stage, the individual faces a different "crisis" or developmental task (see Chapter 9 for a detailed discussion of Erikson's concept of crisis). The crisis is initiated, on one hand, by changing characteristics of the person—biological maturation or decline, cognitive changes, advancing (or deteriorating) motor skills—and, on the other hand, by corresponding changes in others' attitudes, behaviors, and expectations. As in all stage theories, people qualitatively change from stage to stage, and so do the crises or tasks that they confront. In the first stage, infants must resolve the crisis of **trust versus mistrust** (see Chapter 4). Infants, in their relative helplessness, are "incorporative." They "take in" what is offered, including not only nourishment but also stimulation, information, affection, and attention. If infants' needs for such input are met by responsive caregivers, they will begin to trust others, to feel valued and valuable, and to view the world as a safe place. If caregivers are not consistently responsive, infants will fail to establish basic trust or to feel valuable, carrying mistrust with them into the next stage of development, when the 1- to 3-year-old

toddler faces the crisis of **autonomy versus shame and doubt**. Mistrust in others and self will make it more difficult to successfully achieve a sense of autonomy.

The new stage is initiated by the child's maturing muscular control and emerging cognitive and language skills. Unlike helpless infants, toddlers can learn not only to control their elimination but also to feed and dress themselves, to express their desires with some precision, and to move around the environment without help. The new capacities bring a strong need to practice and perfect the skills that make children feel in control of their own destinies. Caregivers must be sensitive to the child's need for independence and yet must exercise enough control to keep the child safe and to help the child learn self-control. Failure to strike the right balance may rob children of feelings of autonomy—a sense that “I can do it myself”—and can promote instead either shame or self-doubt.

These first two stages illustrate features of all of Erikson's stages (see Table 1.2 for a description of all eight stages). First, others' sensitivity and responsiveness to the individual's needs create a context for positive psychosocial development. Second, attitudes toward self and toward others emerge together. For example, developing trust in others also means valuing (or trusting) the self. Third, every psychosocial crisis or task involves finding the right balance between positive and negative feelings, with the positive outweighing the negative. Finally, the successful resolution of a crisis at one stage helps smooth the way for successful resolutions of future crises. Unsuccessful resolution at an earlier stage may stall progress and make maladaptive behavior more likely.

Erikson's personality theory is often more appealing to helping professionals than Freud's theory. Erikson's emphasis on the psychosocial aspects of personality focuses attention on precisely the issues that helpers feel they are most often called on to address: feelings and attitudes about self and about others. Also, Erikson assumed

TABLE 1.2 Erikson's Psychosocial Stages of Development

STAGE OR PSYCHOSOCIAL “CRISIS”	APPROXIMATE AGE	SIGNIFICANT EVENTS	POSITIVE OUTCOME OR VIRTUE DEVELOPED	NEGATIVE OUTCOME
Trust vs. Mistrust	Birth to 1 year	Child develops a sense that the world is a safe and reliable place because of sensitive caregiving.	Hope	Fear and mistrust of others
Autonomy vs. Shame & Doubt	1 to 3 years	Child develops a sense of independence tied to use of new mental and motor skills.	Willpower	Self-doubt
Initiative vs. Guilt	3 to 5 or 6 years	Child tries to behave in ways that involve more “grown-up” responsibility and experiments with grown-up roles.	Purpose	Guilt over thought and action
Industry vs. Inferiority	6 to 12 years	Child needs to learn important academic skills and compare favorably with peers in school.	Competence	Lack of competence
Identity vs. Role Confusion	12 to 20 years	Adolescent must move toward adulthood by making choices about values, vocational goals, etc.	Identity and fidelity	Inability to establish sense of self
Intimacy vs. Isolation	Young adulthood	Adult becomes willing to share identity with others and to commit to affiliations and partnerships.	Love	Fear of intimacy, distancing
Generativity vs. Stagnation	Middle adulthood	Adult wishes to make a contribution to the next generation, to produce, mentor, create something of lasting value, as in the rearing of children or community services or expert work.	Care	Self-absorption
Ego Integrity vs. Despair	Late adulthood	Adult comes to terms with life's successes, failures, and missed opportunities and realizes the dignity of own life.	Wisdom	Regret

that the child or adult is an active, self-organizing individual who needs only the right social context to move in a positive direction. Further, Erikson was himself an optimistic therapist who believed that poorly resolved crises could be resolved more adequately in later stages if the right conditions prevailed. Erikson was sensitive to cultural differences in behavioral development. Finally, developmental researchers frequently find Eriksonian interpretations of behavior useful. Studies of attachment, self-concept, self-esteem, and adolescent identity, among other topics addressed in subsequent chapters, have produced results compatible with some of Erikson's ideas. (See Chapter 4, Box 4.2 for a biographical sketch of Erikson.)

PIAGET'S COGNITIVE DEVELOPMENT THEORY

In Jean Piaget's **cognitive development theory**, we see the influence of 18th-century philosopher Jean-Jacques Rousseau (e.g., 1762/1948), who argued that children's reasoning and understanding emerges naturally in stages and that parents and educators can help most by allowing children freedom to explore their environments and by giving them learning experiences that are consistent with their level of ability. Similarly, Piaget outlined stages in the development of cognition, especially logical thinking, which he called *operational thought* (e.g., Inhelder & Piaget, 1955/1958, 1964; Piaget, 1952, 1954). He assumed that normal adults are capable of thinking logically about both concrete and abstract contents but that this capacity evolves in four stages through childhood. Briefly, the first **sensorimotor stage**, lasting for about two years, is characterized by an absence of representational thought (see Chapter 3). Although babies are busy taking in the sensory world, organizing it on the basis of inborn reflexes or patterns, and then responding to their sensations, Piaget believed that they cannot yet symbolically represent their experiences, and so they cannot really reflect on them. This means that young infants do not form mental images or store memories symbolically, and they do not plan their behavior or intentionally act. These capacities emerge between 18 and 24 months, launching the next stage.

Piaget's second, third, and fourth stages roughly correspond to the preschool, elementary school, and the adolescent-adult years. These stages are named for the kinds of thinking that Piaget believed possible for these age groups. Table 1.3 summarizes each stage briefly, and we will describe the stages more fully in subsequent chapters.

Piaget's theory is another classic stage model. First, cognitive abilities are qualitatively similar within stages. If we know how a child approaches one kind of task, we should be able to predict her approaches to other kinds of tasks as well. Piaget acknowledged that children might be advanced in one cognitive domain or lag behind in another. For example, an adolescent might show more abstract reasoning about math than about interpersonal matters. He called these within-stage variations **décalages**. But generally, Piaget expected that a child's thinking would be organized in similar ways across most domains. Second, even though progress through

TABLE 1.3 Piaget's Cognitive Stages of Development

STAGE	APPROXIMATE AGE	DESCRIPTION
Sensorimotor	Birth to 2 years	Through six substages, the source of infants' organized actions gradually shifts. At first, all organized behavior is reflexive—automatically triggered by particular stimuli. By the end of this stage, behavior is guided more by representational thought.
Preoperational	2 to 6 or 7 years	Early representational thought tends to be slow. Thought is "centered," usually focused on one salient piece of information, or aspect of an event, at a time. As a result, thinking is usually not yet logical.
Concrete operational	7 to 11 or 12 years	Thinking has gradually become more rapid and efficient, allowing children to now "decenter," or think about more than one thing at a time. This also allows them to discover logical relationships between/among pieces of information. Their logical thinking is best about information that can be demonstrated in the concrete world.
Formal operational	12 years through adulthood	Logical thinking extends now to "formal" or abstract material. Young adolescents can think logically about hypothetical situations, for example.

the stages could move more or less quickly depending on many individual and contextual factors, the stages unfold in an invariant sequence, regardless of context or culture. The simpler patterns of physical or mental activity at one stage become integrated into more complex organizational systems at the next stage (**hierarchical integration**). Finally, despite the qualitative differences across stages, there are functional similarities or continuities from stage to stage in the ways in which children's cognitive development proceeds. According to Piaget, developmental progress depends on children's active engagement with the environment. This active process, which will be described in more detail in Chapter 3, suggests that children (and adults) build knowledge and understanding in a **self-organizing** way. They interpret new experiences and information to fit their current ways of understanding even as they make some adjustments to their understanding in the process. Children do not just passively receive information from without and store it "as is." And, knowledge does not just emerge from within as though preformed. Instead, children actively build their knowledge, using both existing knowledge and new information. This is a **constructivist** view of development.

Piaget's ideas about cognitive development were first translated into English in the 1960s, and they swept American developmental researchers off their feet. His theory filled the need for an explanation that acknowledged complex qualitative changes in children's abilities over time, and it launched an era of unprecedented research on all aspects of children's intellectual functioning that continues today. Although many of the specifics of Piaget's theory have been challenged by research findings, researchers, educators, and other helping professionals still find the broad outlines of this theory very useful for organizing their thinking about the kinds of understandings that children of different ages can bring to a problem or social situation. Piaget's theory also inspired some modern views of cognitive change in adulthood. As you will see in Chapter 11, post-Piagetians have proposed additional stages in the development of logical thinking, hypothesizing that the abstract thinking of the adolescent is transformed during adulthood into a more relativistic kind of logical thinking, partly as a function of adults' practical experience with the complexity of real-world problems.

Emphasizing Continuity: Incremental Change

Unlike stage theories, some theoretical approaches characterize development as a more continuous process. Change tends to be incremental, metaphorically resembling not a staircase but a steadily rising mountainside. Again, picture a 4-month-old girl, and the same girl when she is 4 years old. If you tend to "see" her evolving in small steps from a smiling, attentive infant to a smiling, eager toddler, to a smiling, mischievous preschooler, always noting in your observations threads of sameness as well as differences, your own theoretical assumptions about development may be more compatible with one of these **incremental models**. Like stage models, they can be very different in the types and breadth of behaviors they attempt to explain. They also differ in the kinds of processes they assume to underlie psychological change, such as the kinds of processes involved in learning. But they all agree that developmental change is not marked by major, sweeping reorganizations that affect many behaviors at once, as in stage theories. Rather, change is steady and specific to particular behaviors or behavioral domains. Incremental theorists, like stage theorists, tend to see "change for the better" as a key feature of development. So, adding words to your vocabulary over time would be a typical developmental change, but forgetting previously learned information might not. Social learning theory and most information processing theories are among the many incremental models available to explain development.

LEARNING THEORIES

Learning theories, in what is called the **behaviorist tradition**, have a distinguished history in American psychology. They were the most widely accepted class of theories through much of the 20th century, influenced by many thinkers from

John B. Watson (e.g., 1913) to B. F. Skinner (e.g., 1938) to Albert Bandura (e.g., 1974). These theories trace their philosophical roots from ancient Greece and the writings of Aristotle through John Locke and the British empiricists of the 17th and 18th centuries. In this philosophical tradition, knowledge and skill are thought to accumulate as the result of each person's individual experiences. The environment gradually leaves its imprint on one's behavior and mind, a mind that in infancy is like a blank slate. Locke described several simple processes—association, repetition, imitation, reward, and punishment—by which the environment can have an impact. Many of the processes Locke described were incorporated into behaviorist approaches to development.

Some learning theories explain behavioral change as a function of chains of specific environmental events, such as those that occur in **classical conditioning** and **operant conditioning**. In these processes, change in behavior takes place because environmental events (stimuli) are paired with certain behaviors. Let's begin with classical conditioning, also called **respondent conditioning** (Vargas, 2009). A **respondent** is an automatic response to a stimulus. For example, when you hear an unexpected loud noise you will automatically produce a startle response. This stimulus/response association is unconditioned, built-in to your biological system. But the response can be conditioned to a new, neutral stimulus. Suppose a child calmly watches a dog approach her. At first, sight of the dog is a neutral stimulus. But the dog suddenly barks loudly, causing the child to automatically startle and pull back. Suppose that the next time the child sees the dog, it does not bark. Even so, just the sight of the dog triggers the same response as loud barking would: The child automatically startles and pulls back. The child has learned a new response, because the formerly neutral event (sight of dog) has been paired with an event (loud barking) that automatically causes a startle. Perhaps the startle reaction is also accompanied by feelings of fear. If so, the child has learned to fear this dog and will likely generalize that fear to other, similar dogs. When a neutral event or stimulus is associated with a stimulus that causes an automatic response, the neutral stimulus can become a **conditioned stimulus**, meaning that it can cause the person to make the same automatic response in the future, called a **conditioned response**. This is classical conditioning.

Operant conditioning is different. First, a person performs some behavior. The behavior is an **operant**, any act with potential to lead to consequences in the environment (that is, to "operate" on the environment). Immediately after the operant occurs, there is a "reinforcing event," or **reinforcement**, something that is experienced by the person as pleasurable or rewarding. For example, suppose that a young child happens to babble "da" just as a dog appears in the child's line of sight, and the child's mother excitedly claps and kisses the child. (The mother has mistakenly assumed that the child has tried to say "dog.") The mother's reaction serves as a reinforcement for the child, who will repeat the "da" sound the next time a dog comes into view. In operant conditioning, the child learns to produce a spontaneous behavior or operant (e.g., "da") in response to a cue (e.g., the appearance of a dog) because the behavior was previously reinforced in that situation. A reinforcement is a consequence of the operant behavior that maintains or increases the likelihood of that behavior when the cue occurs again (Sparzo, 2011). The mother's approving reaction is an example of a **positive reinforcement**: Something pleasurable is presented after the operant occurs. There are also rewarding consequences that are called **negative reinforcements**: An aversive experience *stops* or is removed after the operant occurs. If your brother releases you from a painful hammer-hold when you yell "Uncle," you have been negatively reinforced for saying "Uncle" (the operant) in that situation.

Social learning theories, which have focused specifically on how children acquire personality characteristics and social skills, consider conditioning processes part of the story, but they also emphasize "observational learning," or **modeling**. In this kind of learning, one person (the learner) observes another (the model) performing some behavior, and just from close observation, learns to do it too. The observer may or may not imitate the modeled behavior, immediately or in the future, depending on many factors, such as whether the observer expects a reward for the behavior, whether the model is perceived as nurturing or competent, and even whether the observer believes that the performance will meet the observer's own performance standards. Current

versions of social learning theory emphasize many similar cognitive, self-regulated determiners of performance and suggest that they too are often learned from models (e.g., Bandura, 1974, 1999).

Whatever the learning processes that are emphasized in a particular learning theory, the story of development is one in which behaviors or beliefs or feelings change in response to specific experiences, one experience at a time. Broader changes can occur by **generalization**. If new events are experienced that are very similar to events in the original learning context, the learned behaviors may be extended to these new events. For example, the child who learns to say “da” when a particular dog appears may do the same when other dogs appear, or even in the presence of other four-legged animals. Or a child who observes a model sharing candy with a friend may later share toys with a sibling. But these extensions of learned activities are narrow in scope compared to the sweeping changes hypothesized by stage theorists. While these processes explain changes in discrete behaviors or patterns of behavior, learning theories do not explain developmental reorganizations and adaptations in the ways classic stage theories do.

INFORMATION PROCESSING THEORIES

Since the introduction of computing technologies in the middle of the 20th century, some theorists have likened human cognitive functioning to computer processing of information. Not all **information processing theories** can be strictly classified as incremental theories, but many can. Like learning theories, these do not hypothesize broad stages, but emphasize incremental changes in narrow domains of behavior or thought. The mind works on information—attending to it, holding it in a temporary store or “working memory,” putting it into long-term storage, using strategies to organize it or to draw conclusions from it, and so on. How the information is processed depends on general characteristics of the human computer, such as how much information can be accessed, or made available for our attention, at one time. These characteristics can change to some degree over time. For example, children’s attentional capacity increases gradually with age. Yet most changes with age are quite specific to particular domains of knowledge, such as changes in the strategies children use to solve certain kinds of problems.

Furthermore, processing changes are not stagelike; they do not extend beyond the particular situation or problem space in which they occur. For example, Siegler and his colleagues (e.g., Siegler, 1996, 2007; Siegler & Svetina, 2006) describe changes in the ways that children do arithmetic, read, solve problems of various kinds, and perform many other tasks and skills. Siegler analyzes very particular changes in the kinds of strategies that children use when they attempt these tasks. Although there can be similarities across tasks in the ways that strategies change (e.g., they become more automatic with practice, they generalize to similar problems, etc.), usually the specific strategies used in one kind of task fail to apply to another, and changes are not coordinated across tasks. To illustrate, a kindergartner trying to solve an addition problem might use the strategy of “counting from one.” “[T]his typically involves putting up fingers on one hand to represent the first addend, putting up fingers on the other hand to represent the second addend, and then counting the raised fingers on both hands” (Siegler, 1998, p. 93). This strategy is characteristic of early addition efforts, but would play no role in tasks such as reading or spelling. Overall, then, cognitive development in this kind of model is like social development in social learning theories: It results from the accrual of independent changes in many different domains of thought and skill. Development involves change for the better, but it does not lead to major organizational shifts across domains.

Classic Theories and the Major Issues They Raise

Classic theories of development have typically addressed a set of core issues. In our brief review, you have been introduced to just a few of them. Is developmental change qualitative (e.g., stagelike) or quantitative (e.g., incremental)? Are some developments restricted to certain critical periods in the life cycle or are changes in brain and behavior possible at any time given the appropriate opportunities? Are there important continuities across the life span (in characteristics or change processes) or is everything in flux? Are people actively influencing the course and nature

of their own development (self-organizing), or are they passive products of other forces? Which is more important in causing developmental change, nature (heredity) or nurture (environment)? Are there universal developmental trajectories, processes, and changes that are the same in all cultures and historical periods, or is development more specific to place and time?

Classic theorists usually took a stand on one side or the other of these issues, framing them as “either-or” possibilities. However, taking an extreme position does not fit the data we now have available. Contemporary theorists propose that human development is best described by a synthesis of the extremes. The best answer to all of the questions just posed appears to be “Both.”

Contemporary Multidimensional or Systems Theories: Embracing the Complexity of Development

1.3 Explain how and why contemporary multidimensional developmental theories synthesize the extreme positions of classic theorists and assess advantages and disadvantages of using multidimensional approaches.

Throughout this text you will find evidence that development is the result of the relationships among many causal components, interacting in complex ways. Modern developmental theories, which we refer to as **multidimensional** or **systems theories**, explain and describe the enormous complexity of interrelated causal processes in development. They generally assume that in all behavioral domains, from cognition to personality, there are layers, or levels, of interacting causes for change: physical/molecular, biological, psychological, social, and cultural. What happens at one level both causes and is caused by what happens at other levels. That is, the relationships among causes are reciprocal or **bidirectional processes**. For example, increased testosterone levels at puberty (biological change) might help influence a boy to pursue an aggressive sport, like wrestling. The boy’s success at wrestling may cause his status and social dominance to rise among his male friends (social change), and this social change can reciprocally influence his biological functioning. Specifically, it can lead to additional increases in his testosterone levels (Cacioppo & Berntson, 1992).

These theories acknowledge and incorporate many kinds of change: qualitative, transforming changes, both great (stagelike) and small (such as strategy changes within a particular problem-solving domain), as well as continuous, incremental variations that can even be reversible, such as learning and then forgetting new information (e.g., Overton, 1990). This is one example of how contemporary theories integrate features of many classic theories of development.

Think again about a girl who is 4 months old, and then later 4 years old. Do you perceive so many changes that she is transformed into a different sort of creature, and yet, at the same time, do you see enduring qualities that characterize her at both ages? Does your sense of the forces that have changed her include influences such as her family, community, and culture? Do you also recognize that she has played a significant role in her own change and in modifying those other forces? If so, your implicit assumptions about development may be more consistent with multidimensional models than with either stage or incremental theories alone.

Multidimensional theories portray the developing person metaphorically as a vine growing through a thick forest (Kagan, 1994). In doing so, the vine is propelled by its own inner processes, but its path, even its form, is in part created by the forest

it inhabits. There is continuous growth, but there are changes in structure too—in its form and direction—as the vine wends its way through the forest. Finally, its presence in the forest changes the forest itself, affecting the growth of the trees and other plants, which reciprocally influence the growth of the vine.

Many multidimensional theories have been proposed, but they are remarkably similar in their fundamental assumptions and characteristics. They are typically different in which aspects of development they provide most detail about. They include transactional theory (e.g., Sameroff & Chandler, 1975), relational theory (e.g., Lerner, 1998), dialectical theory (e.g., Sameroff, 2012), bioecological theory (e.g., Bronfenbrenner & Ceci, 1994), bio-social-ecological theory (e.g., Cole & Packer, 2011), epigenetic theory (e.g., Gottlieb, 1992), life course theory (Elder & Shanahan, 2006), life span developmental theory (e.g., Baltes, 1997; Baltes, Lindenberger, & Staudinger, 2006), dynamic systems theory (e.g., Thelen & Smith, 1998), and several others. (See Overton, 2015, for a deeper analysis of the similarities and differences among these theories.) Figure 1.2 provides one illustration of the multiple, interacting forces that these theories identify. Two examples of multidimensional models will help flesh out the typical characteristics of many of these theories.

BRONFENBRENNER'S BIOECOLOGICAL THEORY

In his **bioecological theory**, Urie Bronfenbrenner and his colleagues (e.g., Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998, 2006) described all developments—including personality and cognitive change—as a function of **proximal processes**. These are reciprocal interactions between an “active, evolving biopsychological human organism and the persons, objects and symbols in its immediate external environment” (Bronfenbrenner & Morris, 1998, p. 996). In other words, proximal processes refer to a person’s immediate interactions with people or with the physical environment or with informational sources (such as books or movies). Proximal processes are truly interactive: The organism both influences and is influenced by the immediate environment. These proximal processes are modified by more **distal processes**. Some of these are within the organism—such as genes. Others are outside the immediate environment—such as features of the educational system or of the broader culture.

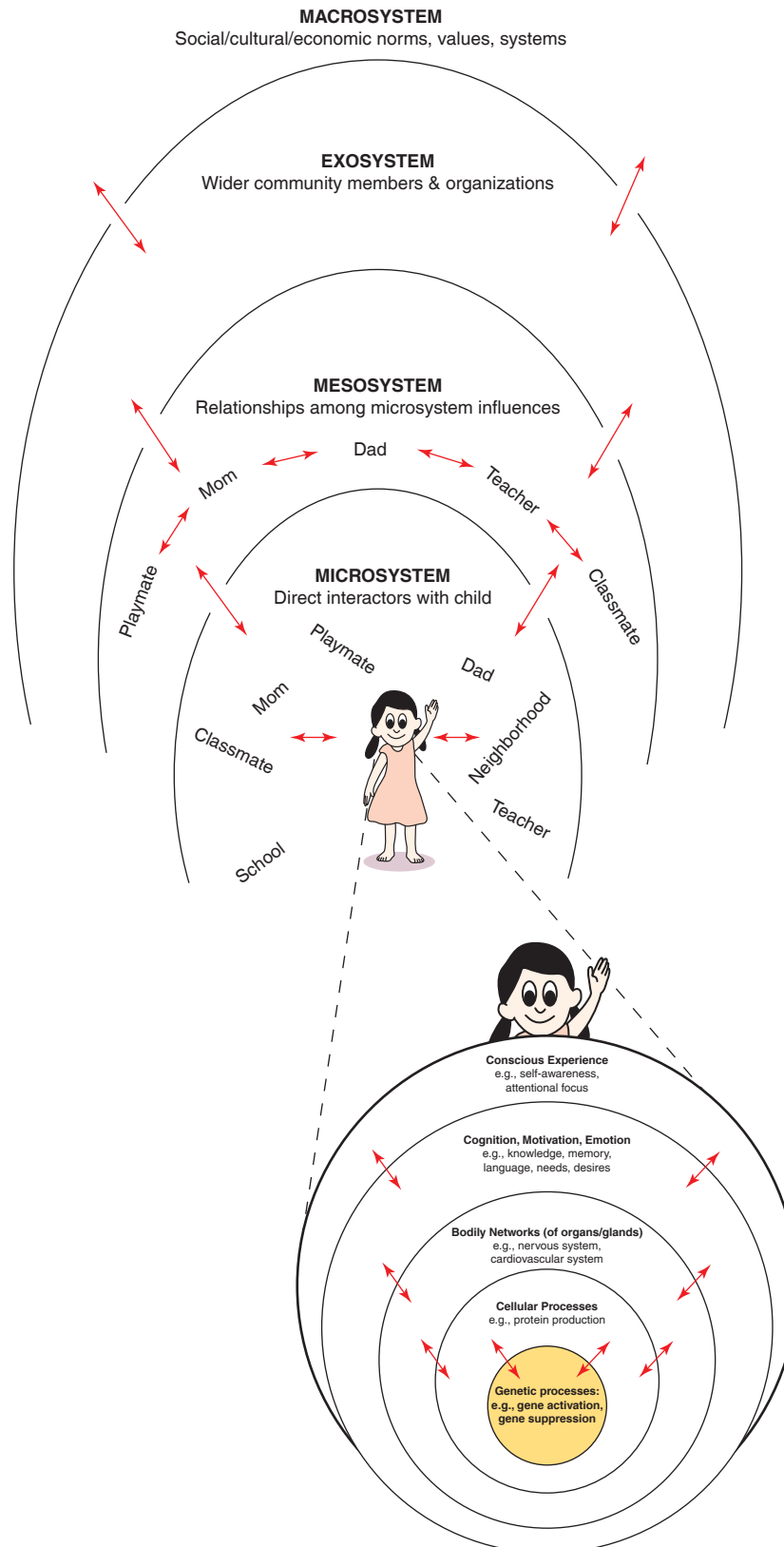
The quality and effectiveness of the immediate environment—its responsiveness to the individual’s particular needs and characteristics and the opportunities it provides—depend on the larger context. For example, parental monitoring of children’s homework benefits children’s academic performance. But monitoring is more effective if parents are knowledgeable about the child’s work. A parent who insists that his child do her algebra homework may have less effect if the parent cannot be a resource who guides and explains the work. Thus, the parent’s own educational background affects the usefulness of the monitoring (Bronfenbrenner & Ceci, 1994).

An individual’s characteristics also influence the effectiveness of the environment. For example, motivations affect the impact of learning opportunities in a given context. A man interested in gambling may learn to reason in very complex ways about horses and their relative probability of winning at the track, but he may not display such complex reasoning in other contexts (Ceci & Liker, 1986). Other important individual qualities include **demand characteristics**, behavioral tendencies that often either encourage or discourage certain kinds of reactions from others. A child who is shy and inhibited, a trait that appears to have some biological roots (Kagan & Fox, 2006), may often fail to elicit attention from others, and may receive less support when she needs it, than a child who is open and outgoing (Bell & Chapman, 1986; see also Chapters 4 and 5).

Changes in the organism can be emergent, stagelike, qualitative changes, such as a shift from preoperational to concrete operational thought (see Table 1.3), or they can be more continuous, graded changes, such as shifts in academic interest or involvement in athletics. Both kinds of change are the result of proximal processes, influenced by more distal internal and external causes. Once changes occur, the individual brings new resources to these proximal processes. For example, when a child begins to demonstrate concrete operational thought, she will be given different tasks to do at home or at school than before, and she will learn things from those experiences that she would not have learned earlier. This is a good example of the bidirectionality of

FIGURE 1.2 A multidimensional (systems) model of development.

This figure illustrates the external influences described in Bronfenbrenner's bioecological theory along with internal influences on the developing child over time. Two-way arrows show bidirectional causality between all adjacent levels and between different parts of the same level. Proximal processes occur at the interface between the child and her microsystems.



proximal processes: Change in the child fosters change in the environment, leading to more change in the child, and so on.

In earlier versions of his theory, Bronfenbrenner characterized in detail the many levels of environment that influence a person's development. He referred to the immediate environment, where proximal processes are played out, as the **microsystem**. Babies interact primarily with family members, but as children get older, other microsystems, such as the school, the neighborhood, or a local playground and its inhabitants, become part of their lives. The microsystems interact with and modify each other. For example, a discussion between a child's parent and a teacher might change how one or both of them interacts with the child. The full set of relationships among the microsystems is called the **mesosystem**. The next level of the environment, the **exosystem**, includes settings that children may not directly interact with but that influence the child nonetheless. For example, a teacher's family life will influence the teacher and thereby the child. Or a child's socioeconomic status influences where her family lives, affecting the school the child will attend, and thus affecting the kinds of experiences the child has with teachers. Finally, there is the **macrosystem**, including the customs and character of the larger culture that help shape the microsystems. For example, cultural attitudes and laws regarding the education of exceptional students influence the operation of a school and therefore a child's interactions with teachers.

The environment, then, is like "a set of nested structures, each inside the next, like a set of Russian dolls" (Bronfenbrenner, 1979). In newer versions of his theory, Bronfenbrenner gave equal attention to the nested internal levels of the organism. As we have seen, a person brings to proximal processes a set of dispositions, resources (preexisting abilities, experiences, knowledge, and skills), and demand characteristics. These, in turn, are influenced by biological and physical levels of functioning that include the genes. Bronfenbrenner also emphasized, as other multidimensional theorists do, the bidirectional effects of each level on the adjacent levels. For example, proximal psychological processes playing out in the immediate context are both influenced by, and influencing, physiological processes (Bronfenbrenner & Morris, 1998, 2006). Finally, these interactions continue and change across time.

LIFE SPAN DEVELOPMENTAL THEORY

In **life span developmental theories**, the same developmental processes that produce the transformation of infants into children, and children into adults, are thought to continue throughout adulthood until death. Developmental change is part of what it means to be alive. Adaptation continues from conception to death, with proximal interactions between the organism and the immediate context modified by more distal processes both within the individual and in the environment. Life span theorists like Paul Baltes (e.g., 1997; Baltes, Lindenberger, & Staudinger, 2006) refer to the interacting web of influences on development as the "architecture" of biological and cultural supports. Baltes proposed that successful adaptation is benefited more by biological supports in childhood than in adulthood. Cultural supports are important in childhood, but if not optimal, most children have biological supports (we could think of them as a complex of biological protective factors) that have evolved to optimize development in most environments. For adults, successful adaptation is more heavily dependent on cultural supports or protective factors. "The older individuals are, the more they are in need of culture-based resources (material, social, economic, psychological) to generate and maintain high levels of functioning" (Baltes, Lindenberger, & Staudinger, 1998, p. 1038). We will have more to say about life span developmental theories in Chapter 13.

Applying Theory to Practice

We have described both classic theoretical approaches to development and the more integrative and complex multidimensional theories that contemporary developmentalists favor. Preferring one of these paradigms can influence the way helping

professionals assess and interpret client concerns. Let's consider how various theoretical orientations to development might apply to a counseling situation:

Juliana is a 26-year-old Latina female who was raised in an intact, middle-class family. Her father was a teacher and her mother a housewife who occasionally worked in a neighborhood preschool as a teacher's aide. Juliana was the second child in the family, which included an older brother and a younger sister. She attended parochial schools from kindergarten through 12th grade, where she worked very hard to achieve average and sometimes above-average grades. During her early years in school, Juliana had reading difficulties and received remedial instruction. At home, her parents stressed the value of education and kept a close watch on the children. The children were well behaved, respectful, and devoted to the family. Most of their spare time was spent with their close relatives, who lived nearby. Despite Juliana's interest in dating during high school, her parents did not permit her to spend time with boyfriends. They told her that she needed to concentrate on her schoolwork so that she could be a nurse when she grew up. After graduation, Juliana entered a small local college and enrolled in a program designed to prepare her for a career in nursing. She lived at home and commuted to school on a daily basis. Life proceeded as it had for most of her high school years. Her course work, however, became increasingly more difficult for her. She also felt isolated from most of her classmates, many of whom were working and living on their own. She tried to participate in some of the college's social events, but without much satisfaction or success. To pass her science courses, Juliana had to spend most of her time studying. By the middle of her academic program, it was clear that she was in danger of failing. She felt frustrated and angry. At this point, she became romantically involved with Bill, a young White man who worked at the college. She dropped out of school and moved in with him, hoping their relationship would lead to marriage. Her family was shocked and upset with her decision and put pressure on her to come home. Eventually, the relationship with Bill ended, and Juliana, unwilling to return home, moved in with a group of young students who were looking for someone to share the rent. She found a low-wage job, changed her style of dress to look more like the younger students, and quickly became involved in a series of other romantic relationships. Juliana grew increasingly despondent about her inability to maintain a relationship that would lead to marriage and a family. In addition, she felt some distress about not completing her college degree. She enrolled in a night-school program at a local community college to retake her science courses. Once again, she experienced confusion, problems fitting in, and academic difficulty. She went to the college counseling center to ask for help.

Take a minute to think about how you would respond to Juliana. Do any of your views about development enter into your appraisal of her situation? If you tend to be a stage theorist, you might consider Juliana's problems to be based on Erikson's crisis of intimacy in early adulthood (see Table 1.2). She does seem to have difficulties with intimacy, and she is just at the age when these issues are supposed to become central to psychosocial development. But a rigid assumption of age-stage correspondence could prevent you from considering other possibilities, such as an unresolved identity crisis.

If you tend to be an incremental theorist, perhaps favoring social learning explanations, you might perceive Juliana's situation quite differently. You may see Juliana as having problems in her intimate relationships that are similar to her difficulties with school. In both domains she is apparently "delayed," perhaps because she has had insufficient opportunities to learn social and academic skills or perhaps because she has been reinforced for behaviors that are ineffective in more challenging contexts. Although this may be a useful way of construing Juliana's dilemma, any stage issues contributing to her distress may be missed. Also, there could be factors in her social environment, such as cultural expectations, that might not be considered.

If you take a more multidimensional approach, as we do, you will try to remain alert to multiple influences, both proximal and distal, on Juliana's development. The roles of her biological status, her individual capabilities, her stage of development, her earlier experiences, her family, and her culture will all be considered as possible influences and points of intervention. One disadvantage could be that the complexity of the interacting factors is so great that you may find it difficult to sort out the most effective place to begin. Another disadvantage is that macrosystem influences, such as cultural expectations about appropriate roles for women, may be quite resistant to intervention. However, one of the advantages of a multidimensional view is that

it *does* highlight many possible avenues of intervention, and if you can identify one or a few that are amenable to change, you may have a positive influence on Juliana's future.

Helping professionals with different developmental assumptions would be likely to choose different approaches and strategies in working with Juliana. In a sense, any set of theoretical biases is like a set of blinders. It will focus your attention on some aspects of the situation and reduce the visibility of other aspects. Taking a multidimensional or systems view has the advantage of minimizing the constraints of those blinders. In any case, knowing your own biases can help you avoid the pitfalls of overreliance on one way of viewing development.

A New Look at Three Developmental Issues

1.4 Identify three core developmental issues and contrast current research-based conclusions with classic assumptions on each core issue.

In the following sections, we examine three classic developmental issues that have garnered a great deal of attention in recent years. As you read about these issues from the viewpoint of contemporary research, you will begin to see why modern developmental theories take a multidimensional approach. Notice whether any of the new information causes you to reexamine your own assumptions about development.

Nature *and* Nurture

How did you respond to the first three items of the questionnaire in Box 1.1? Did you say that physical traits are primarily inherited? Did you say that intelligence or personality is inherited? Your opinions on these matters are likely to be influenced by your cultural background. Through most of the last century, North Americans viewed intelligence as mostly hereditary, but Chinese and Japanese tended to disregard the notion of "native ability" and to consider intellectual achievements more as a function of opportunity and hard work (e.g., Stevenson, Chen, & Lee, 1993). Partially influenced by psychological research, North Americans have begun to see intelligence as at least partially dependent on education and opportunity, but they still are likely to see some achievements, such as in mathematics, as mostly dependent on ability. Alternatively, North Americans have traditionally viewed social adjustment as a result of environmental experiences, especially parents' nurturance and socialization practices, but East Asians typically see these qualities as mostly inherent traits.

Developmental researchers acknowledge that both nature and nurture influence most behavioral outcomes, but in the past they have often focused primarily on one or the other, partly because a research enterprise that examines multiple causes at the same time tends to be a massive undertaking. So, based on personal interest, theoretical bias, and practical limitations, developmental researchers have often systematically investigated one kind of cause of behavior, setting aside examination of other causes. Interestingly, what these limited research approaches have accomplished is to establish impressive bodies of evidence, *both* for the importance of genes *and* for the importance of the environment!

What theorists and researchers face now is the difficult task of specifying how the two sets of causes work together: Do they have separate effects that "add up," for example, or do they qualitatively modify each other, creating together, in unique combinations, unique outcomes? Modern multidimensional theories make the latter assumption, and evidence is quickly accumulating to support this view. Heredity

and environment are interdependent: The same genes operate differently in different environments, and the same environments are experienced differently by individuals with different genetic characteristics. Developmental outcomes are always a function of interplay between genes and environment, and the operation of one cannot even be described adequately without reference to the other. In Chapter 2 you will learn more about this complex interdependence.

Neuroplasticity and Critical (Sensitive) Periods

Neuroplasticity refers to changes in the brain that occur as a result of some practice or experience. Neurons, the basic cells of the nervous system, become reorganized as a result of such practice, resulting in new learning and memory. Neural changes were once thought to occur primarily in infancy and early childhood. Contemporary neuroscientists recognize that “there is no period when the brain and its functions are static; changes are continuous throughout the lifespan. The nature, extent and the rates of change vary by region and function assessed and are influenced by genetic as well as environmental factors” (Pascual-Leone & Taylor, 2011, p. 183). The realization that our brains continue to change throughout life has revolutionized the way scientists regard the brain. As we have seen, modern multidisciplinary theories incorporate descriptions of relative life-long plasticity.

The time-related “variation by region and function” noted previously is at the heart of the classic question about *critical (sensitive) periods*. Although the brain exhibits plasticity throughout life, do some changes, such as first language learning, occur more easily and more effectively at certain ages and stages? Or, is the organism able to develop or learn any new skill at any time with the right opportunities? There is little doubt that there are some behavioral developments that usually take place within a particular period. In many ways, language acquisition is nearly complete by the age of 5 or 6, for example. But is it possible to acquire a language at another point in the life cycle if this usual time is somehow “missed”? Pinker (1994) reviewed several findings that led him to conclude that although language can be learned at other times, it is never learned as well or as effortlessly as it would have been in the critical period from about 1 to 5 years. Consider deaf individuals learning American Sign Language (ASL). ASL is a “real” symbolic language, with a complex grammar. Sometimes, however, American deaf children are not given the opportunity to learn ASL in their early years, often because of a belief that deaf children should learn to read lips and speak English (the “oralist” tradition). As a result, many deaf children simply do not learn any language. When these individuals are introduced to ASL in late childhood or adolescence, they often fail to acquire the same degree of facility with the grammar that children who learn ASL as preschoolers achieve.

If findings like these mean that a sensitive period has been missed, what could be the cause of such time-dependent learning? It is usually assumed that the end of a sensitive period is due to brain changes that make learning more difficult after the change. The environmental conditions that are likely to support the new learning may also be less favorable at certain times. As we have seen, the explanation is likely to be complex. For example, total immersion in a language may be just the right arrangement for a preschooler who knows no other communicative system. Older learners, even deaf children or adults who have learned no formal language early in life, may always filter a new language through previously established communication methods, such as an idiosyncratic set of hand signals. If so, for an older child or adult, total immersion may be less effective than a learning environment that can make correspondences between the new language and the old one. In later chapters, we will examine this issue as it relates to several developments, such as the emergence of sexual identity (Chapter 8) and the formation of bonds between mothers and infants (Chapter 4). In each case, the evidence indicates that time-dependent, region-specific windows of opportunity for rapid neural reorganization exist alongside continuing plasticity.

Universality and Specificity: The Role of Culture

Developmental science is concerned with explaining the nature and characteristics of change. Are developmental changes universal, having the same qualities across ethnic, racial, or socioeconomic status groups, between genders, and from one historical

period to another? Or does development depend entirely on the specific group or time within which it occurs? Many classic developmental theories have posited basic similarities in development across different groups and historical periods. Stage theories, like Freud's theory in particular, often specify invariant sequences in personality or cognitive outcomes that are thought to apply to everyone, regardless of culture, group, or historical time. Yet even classic stage theories incorporate sociocultural influences.

In Erikson's psychosocial stage theory, for example, all adolescents confront the task of formulating an adult identity. But the nature of that identity will certainly differ across groups. How complex and arduous a struggle the adolescent might face in forming an identity could vary dramatically depending on her context. Erikson's studies of identity development in two Native American groups, the Sioux in South Dakota and the Yurok on the Pacific coast, and of mainstream White culture revealed different struggles and different outcomes in each (Erikson, 1950/1963).

Some **sociocultural theories**, which trace their roots to the work of Lev Vygotsky (e.g., 1934, 1978; see Chapter 3), argue that cognitive developments may be qualitatively different in different cultures (e.g., Rogoff, 2003; Sternberg, 2014). For example, in Western cultures classifying objects by functional associations (birds with nests) is a trademark of preschoolers' sorting behavior. Hierarchically organized taxonomic classification (e.g., collies and dachshunds grouped as kinds of dogs, dogs and birds grouped as animals) is more typical of elementary-school-age children. Piaget regarded taxonomic sorting to be an indicator of the logical thinking that emerges in middle childhood. But in some ethnic groups, such as the African Kpelle tribe, even adults do not sort objects taxonomically. They use functionally based schemes, perhaps because these are more meaningful in their everyday lives, and they would probably consider such schemes more sophisticated than a taxonomic one (Cole, 1998).

Even sub-cultural groups within the same society may show differences in the development of cognitive skills. For example, in most societies, boys perform better than girls on certain spatial tasks. Yet in a study that included low-, middle-, and high-income children in Chicago, low-income girls performed as well on spatial tasks as low-income boys, even though the usual gender difference was found in the other income groups (Levine, Vasilyeva, Lourenco, Newcombe, & Huttenlocher, 2005). Differences in the typical experiences of children in different social classes are the likely reason for these cognitive variations. Bronfenbrenner (1979) explained how culture could influence behavior through proximal processes, the daily give and take with others in one's social networks that he considered the primary engines of development. Adults in particular are "cultural experts," and their interactions with children embody cultural expectations and ways of doing things (Oyserman, 2017).

The bulk of social science research has been done on a relatively narrow sample of WEIRD (Western, Educated, Industrialized, Rich, and Democratic) people (Henrich, Heine, & Norenzayan, 2010), and developmental research is no exception (Fernald, 2010). Researchers have become acutely aware of the need to discover how developmental processes play out among other groups both within and outside North America to answer questions about universal versus specific developmental trajectories. To this end, culture, race, and ethnicity now have greater prominence in research than in the past, even though these constructs have proven somewhat difficult to define (Corbie-Smith et al., 2008).

Formerly, differences among **racial groups**, like Blacks, Whites, and Asians, were considered to be due to heredity, identifiable primarily by skin color, but also by variations in hair, bone structure, or other physiological markers. The assumption was that these superficial markers were indicators of deeper biological differences. But the range of genetic differences within groups is actually equal to or greater than those between racial groups (Richeson & Sommers, 2016). Racial groupings are now usually seen as social constructions, founded on superficial characteristics that change across time and circumstance (Saperstein, Penner, & Light, 2013). For example, Arab Americans were considered White before the terrorist attacks of September 11, 2001, but now are often considered non-White (Perez & Hirschman, 2010). **Ethnicity** is sometimes used interchangeably with *race*, although this too is problematic. Shared ancestry, language, a common place of origin, and a sense of belonging to the group are elements commonly used to describe membership in an ethnic group.

Adding to the complexity, **culture** includes a community's shared values, rituals, psychological processes, behavioral norms, and practices (Fiske, Kitayama, Markus, & Nisbett, 1998). The concept clearly overlaps in meaning with "ethnicity." Early studies often represented culture as a kind of "social address" (Bronfenbrenner, 1979) with gender, race, religion, age, language, ethnic heritage, and socioeconomic status as labels signifying aspects of cultural group membership. Think of your own status in relation to the items on this list. Then consider the status of another person you know. How similar to or different from you is this other person? Is there one category that stands out for you when you try to describe her social/cultural address? For someone you consider to be culturally similar to you, do all the labels overlap? Just a little reflection gives you a taste of the dizzying complexity of such distinctions.

Some research demonstrates that shared values might not be the most reliable indicator of culture. For example, a study of values drawn from approximately 169,000 participants from six continents revealed broad agreement in values, contrary to what one might expect. Autonomy, relatedness, and competence were highly ranked across all cultures although some differences were observed for the value of conformity (Fischer & Schwartz, 2011). This finding questions the assumption that cultures are reliably different in their value systems. People in the same cultural group may be too diverse to justify painting with a broad brush. In addition, increasing global migration and trade, as well as worldwide media and information networks, mean that more and more individuals have multiple ethnic/cultural experiences and many may be polycultural in perspective and behavior (Jensen, 2012; Morris, Chiu, & Liu, 2015). Cultural identities can be difficult to pin down. Currently, there is a tendency to move away from static conceptualizations of what constitutes ethnic/cultural group membership and toward more dynamic, process-oriented definitions for these important variables (Brubaker, 2009).

In particular, researchers are concerned about disaggregating social class, or **socioeconomic status (SES)**, from race and ethnic/cultural distinctions. *Socioeconomic status* is based on social standing or power, and is defined by characteristics of the adults in a household, including educational background, income, and occupation. Frequently, variables of race/ethnicity and SES are conflated in research, leading to questionable findings. This conflation comes in at least two forms. First, SES is a characteristic that can directly affect how people perceive an individual's racial identity. If someone is affluent or highly educated, others may assume that she is White; if she is on welfare, others might assume that she is a member of a minority (e.g., Penner & Saperstein, 2008).

Second, SES and race/ethnicity can be conflated when research findings are attributed to one factor without examining the other. A good example of why disaggregation is important comes from a study of preschool children's everyday activities in four cultural communities (Black and White in the United States, Luo in Kenya, and European descent in Porto Allegre, Brazil). Tudge and his colleagues (2006) observed everyday behaviors of preschool children, hypothesizing that each culture provides its young with the kinds of opportunities (e.g., school or work-related activities) deemed important for successful participation in their culture. Equal numbers of high and low SES children within each culture were included to study the intersection of culture and class. The Brazilian children engaged in fewer academic activities compared to White and Kenyan groups. Nonetheless, middle-class Brazilian children were involved in more academic lessons than their working-class counterparts. Kenyan children participated in significantly more work-related activities than all other groups. However, the working-class Kenyan children engaged in twice as much work as those from all other groups, including middle-class Kenyan children.

As complex as the identification of culture is, it is clear that cultural experience is important to development. But does culture have effects only at a superficial level (e.g., learning different behaviors, manners, customs), or are there effects on more fundamental processes, such as information processing and developing brain structures (Fiske, 2009; Kitayama & Park, 2010)? This is precisely the kind of question that experimenters in the field of cultural psychology have taken on (Sternberg, 2014; Wang, 2016).

Consider, for example, the often-cited distinction between the holistic (interdependent) modes of interacting in cultures of the Eastern hemisphere and the analytic (independent) modes in cultures of the Western hemisphere. A body of research now

supports the existence of reliable differences beyond just superficial behavioral ones. First, differences have been identified in information processing (attention, understanding cause and effect, memory, and categorization) between people from Eastern and Western cultures (Nisbett & Masuda, 2003). Some analysts have speculated that the historical-cultural antecedents of these processing differences may be ancient ways of viewing the world common to Chinese and Greek societies respectively (Nisbett, Peng, Choi, & Norenzayan, 2001). In turn, each of these ways may have been shaped by the respective economies of those societies (large-scale farming vs. hunting and trading) along with their different physical environments (open plain vs. seaside mountains). Freed from the interdependence required for massive farming and irrigation projects, ancient Greeks, the forebears of Western societies, came to view the world by focusing on central objects. In other words, the ancient Greeks inhabited a world where objects were typically perceived as relatively unchanging and detached from their context. The objects' features (size, shape, color, etc.) were investigated so as to understand their operating rules and to predict and control their operations. Logic and scientific empiricism are related to this perspective on the world.

Needing to pay attention to the larger context in order to thrive, members of Eastern societies such as China focused more holistically on interrelationships, paying as much attention to the field wherein objects existed as to the objects themselves. Understanding the world from this perspective was more likely to incorporate figure-ground relationships and to hold the dialectic of opposing points of view in balance (Nisbett & Masuda, 2003). It could be that these fundamental differences in Greek and Chinese social organization and cognition, based upon geographical constraints and the exigencies of survival, continued to affect the development of people and societies that followed in their wake.

Any study of cultural differences embodies a fundamental wish to see the world as others do. Imagine that you could literally see what people pay attention to as a way of gaining knowledge about their perspective. Seeing the world through the eyes of people who live in the Eastern and Western regions of the globe could be a fruitful place to start because any differences that evolved from long histories of practice might be more obvious. Recent studies of attention and visual processing that compare these two cultural groups, made possible by the development of a variety of advanced technologies, have indeed proved fruitful.

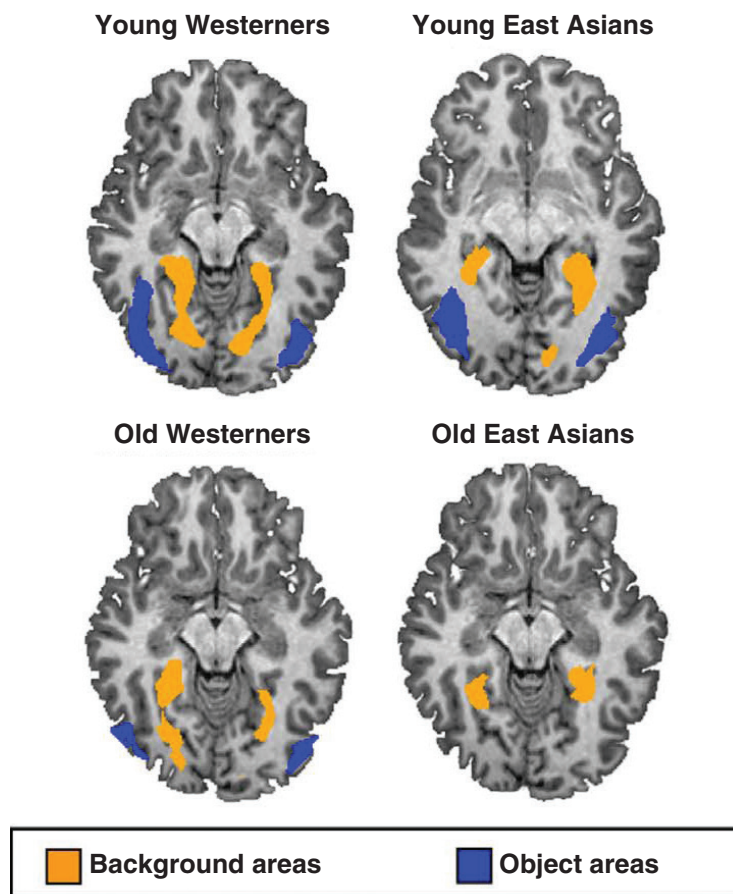
Results of many studies have demonstrated a greater tendency among Eastern participants to attend to context when compared to Western participants who are more likely to attend to central objects (e.g., in photos of animals in complex environments; Boduroglu, Shah, & Nisbett, 2009; Kitayama, Duffy, Kawamura, & Larsen, 2003; Masuda & Nisbett, 2001, 2006). Eastern research subjects also process groups of items in relationship to each other rather than by category (e.g., linking a cow and grass instead of a cow and chicken; Chiu, 1972; Ji, Zhang, & Nisbett, 2004). They typically make judgments of contextual characteristics more quickly than Westerners, and they engage fewer areas of the brain in the process (Goh et al., 2013). The Eastern emphasis on field also extends to making causal attributions for events. When Westerners were asked to explain the reasons for outcomes in athletic competitions or the causes of criminal events, they emphasized internal traits as causal, whereas Easterners gave more contextualized explanations for outcomes (Choi, Nisbett, & Norenzayan, 1999).

In an ingenious study demonstrating the interrelated effects of culture, development, and neuroplasticity, Goh et al. (2007) show that what you pay attention to makes a subtle yet enduring difference in your brain over time. Repeated practice results in changes in the brain that become our preferred modes of thought and action. The cultural shaping of visual processing in the brain was explored in groups of young and old North Americans and East Asians from Singapore. Researchers studied the visual ventral cortex, a complex of brain structures responsible for identifying what is being processed visually (Farah, Rabinowitz, & Quinn, 2000). Some parts of this complex process object information and other parts process background information (see Park & Huang, 2010). The inclusion of older individuals in this study allowed researchers to analyze whether sustained cultural experience with analytic (central object) versus holistic (background/context) processing sculpted the brain in unique ways over time.

During experimental sessions utilizing an adapted functional magnetic resonance imaging (fMRI) paradigm (see Chapter 2), which shows which parts of the brain are in use during different tasks, all participants viewed pictures of objects in scenes. As you can see in Figure 1.3, young Westerners' and Easterners' brains were similar in where and to what extent they processed objects versus backgrounds. Older participants from both cultures showed reduced processing of objects relative to backgrounds compared to younger participants. But there was an East/West difference in the older participants: The older Asian participants showed much more of a reduction than older Western participants in object processing. These older Asians did not lose their ability to focus on central objects, but they needed to be prompted to do so. For them, holistic processing had become the default mode, suggesting a lifetime cultural habit of attention to context.

FIGURE 1.3 East/West differences in visual processing of younger and older individuals.

Colored areas show brain areas that are active when processing central objects (blue) and background (orange) visual information. Younger Easterners and Westerners show brain activity for visual processing in both central object and background areas. Older Western participants show activity for visual processing of background and reduced processing for central objects. Older Eastern participants show activity in background processing areas but no activity in central object processing areas.



SOURCE: Goh, J. O., & Park, D. C., J. Y. Chiao (Ed.) (2009). Culture sculpts the perceptual brain. *Progress in Brain Research*, 178, 95–111. Elsevier Ltd. Reprinted by Permission of Elsevier Ltd.

Applications

In this chapter, we discussed the importance of studying human development and introduced you to some of the worldviews and issues central to the field. The value of developmental knowledge to helping professionals cannot be underestimated because it brings an important perspective to practice. This unique perspective includes several elements: a sensitivity to the fact that persons grow and change over time and that their capacities and concerns also shift over the life course; a recognition of the influence of culture and environment over time; an appreciation for scientific knowledge about development; and a commitment to applying this knowledge to improve the lives of people across the lifespan.

Use of research-based developmental knowledge as a kind of meta-theory helps practitioners clarify complex mechanisms underlying human growth and change and sets the stage for effective prevention and intervention of problems (Beauchaine, Neuhaus, Brenner, & Gatzke-Kopp, 2008). Developmentally sensitive research can identify periods within the life span and intra-individual variables that present opportunities for maximal receptivity to certain interventions (Brunswasser & Garber, 2016; Malti, Noam, Beelman, & Sommer, 2016).

A developmental approach to mental health treatment also leads to personalized care because it emphasizes both individual *and* cultural differences. Culturally competent practice is now considered the standard for performance across many helping professions. Early advocates pioneered a set of guidelines that addressed cultural awareness, knowledge, and skills (Arredondo & Perez, 2006; Sue, Arredondo, & McDavis, 1992), and now many helping fields, including medicine, psychology, social work, education, nursing, and others, have incorporated similar aspects within their professional practice guidelines. Table 1.4 shows standards from psychology, nursing, and social work (American Nurses Association, 2015; American Psychological Association, 2003; National Association of Social Workers, 2017). Notice the general level of agreement in what constitutes good practice. The newly developed Multicultural and Social Justice Counseling Standards (Ratts, Singh, Nassar-McMillan, Butler, & McCullough, 2016) represent an even more contextualized approach to professional practice. In addition to the core elements listed in the first column of Table 1.4, these standards advocate awareness of such issues as privilege, power, and oppression insofar as they affect treatment and highlight the increasing diversity of provider–client relationships. Some provider–client identities might be shared (e.g., sexual orientation) or non-shared (e.g., race or immigrant status), but these identities may not always reflect the dominant paradigm of privileged counselor and disadvantaged client. According to these new standards, counselor–client identities and statuses should be addressed directly within the counseling relationship so as to reduce potential barriers to progress.

Knowledge of developmental science helps clinicians in other ways, as well. The helper should be able to distinguish typical developmental perturbations from atypical deviations. A deep understanding of the field allows clinicians to avoid prescriptive solutions based on rigid stage theories of development. Skilled helpers should keep themselves well informed about current research findings while avoiding overgeneralizations from single studies. A simplistic approach to developmental issues typically will miss the mark by ignoring the complexities of interacting factors, including contextual, cultural, and historical influences. The kinds of direct causal connections between experiences and outcomes that would make prediction much easier for helpers are, unfortunately, almost impossible to obtain. We will try to present the best available information that applies to helpers in these chapters; however, it is important to recognize that the field of developmental science is itself continually developing. Helpers and others need to keep an open mind and continually work to accommodate new information as they practice reflection in action.

Full Spectrum Research: Reducing the Divide Between Science and Practice

The gap between research and practice that we discussed earlier in this chapter is important to revisit. You may have already recognized the explosion of “research-based” or “empirically supported” treatments in the world of practice. Perhaps you have become curious about how these terms came to be contemporary buzzwords, *de rigueur* for any preventive or intervention effort. Have you wondered if these interventions will actually work with clients in your setting? Have you worried that research-based treatment requirements might make you feel constrained or uninspired? The *reflective practitioner model* offers a way to think about this research–practice divide at a personal level, but there is currently a substantial effort among researchers and clinicians to forge a more substantive and practical partnership.

A robust research–practice relationship offers benefits to both parties. Researchers need the input of clinicians to help identify important questions, to provide access to research participants, and to learn what works in the real world to alleviate suffering. Helping professionals understand that they can benefit from scientific advances by improving the quality and delivery of the care they provide (Houck, Forcehimes, Davis, & Bogenschutz, 2016). Needless or ineffective treatments will not improve individual or public health, and may actually do harm. Furthermore, resources like time and money, especially when they are limited, need to be targeted in ways that promise maximum benefit.

However, the path from scientific discovery to adoption by practitioners is generally not a straight line. Students of science know that people were aware of the existence

TABLE 1.4 Standards for Cultural Competence Across Three Helping Professions

CATEGORY	PSYCHOLOGY (APA, 2003)	NURSING (ANA, 2015)	SOCIAL WORK (NASW, 2017)
Self-Awareness	Understand that one's beliefs and values might be different from those of clients, become aware of personal attitudes, and work to increase contacts with diverse groups.	Understand one's personal beliefs, values, and cultural heritage.	Develop an understanding of personal values and beliefs. Recognize how personal identities, power, and privilege affect professional practice.
Sensitivity to/Gaining Knowledge About Other Cultures	Increase knowledge about others' worldviews, including the effects of stigmatization. Become knowledgeable about social policies that affect other cultures.	Become a life-long learner about different cultural worldviews and diverse ways of perceiving and acting in the world. Demonstrate respect and equitable treatment for all consumers of healthcare.	Continue to develop knowledge about cultural differences in areas such as race, ethnicity, gender, immigrant and refugee status, tribal heritage, sexual identity, age, mental and emotional disability, etc.
Professional Training	Infuse multicultural information into professional training and include it in coursework in psychology in general.	Work toward a multicultural workforce through education, retention, and recruitment policies. Provide training and continuing education in culturally congruent care and global health issues.	Participate in training and continuing lifelong education that advances cultural competence.
Research	Conduct culturally sensitive, ethical research. Ethnic, racial, and linguistic differences should be considered in research design, analysis, interpretation, and assessment.		
Skills for Practice	Apply culturally appropriate clinical skills in practice by focusing on the client within his or her cultural context, using culturally appropriate assessment tools, and having a broad repertoire of interventions.	Engage in culturally competent practice. Recognize acculturation stage and attendant needs of healthcare consumers. Consider the impact of discrimination and oppression in vulnerable groups as they affect health outcomes. Respect consumer decisions based on cultural norms. Employ culturally relevant verbal and nonverbal communication skills and interventions with evidence to support effectiveness with diverse groups.	Utilize a broad array of culturally appropriate skills and techniques and understand what role culture plays in the helping process. Utilize resources and services as appropriate when serving diverse client groups.
Operations of Organizations and Systems; Social Justice Advocacy	Apply culturally informed organizational practices and expand professional role to change agent.	Advocate for culturally competent care through policies that promote health and reduce harm among diverse or under-represented groups. Advocate for equal access to care and inclusion of patient's cultural beliefs in all aspects of health care.	Be aware of the effect of social policies and programs on diverse client populations and advocate for them whenever appropriate. Demonstrate leadership in communicating information about diverse groups to others. When appropriate, engage in policy development that advocates for disadvantaged and underrepresented groups. Advocate for diversity within the profession and assume leadership for advocacy efforts in the broader community when appropriate.

of microbes in the 16th century but disregarded their role in disease transmission. Instead, diseases were believed to be caused by miasmas (i.e., malodorous, poisonous clouds or vapors). Before the paradigmatic shift that cast miasmas into disrepute, 19th-century physicians in English hospitals routinely transitioned from performing autopsies to

delivering babies without any preliminary ablutions. Rates of puerperal fever were understandably high, and it took determined research and advocacy from scientists like Semmelweis and others to shift awareness (Nuland, 2004). Even though scientific evidence might be clear on a certain subject, changing actual helping behavior is quite a different

matter. Currently, despite evidence of its importance, only 40% of hospital personnel actually comply with standard hand-washing guidelines according to a meta-analysis of 98 studies (Erasmus et al., 2010). Efforts to change and improve health as well as clinical practice must be responsive to real people in real environments and provide more than convincing data.

Young and Borland (2011) argue that the research–practice gap exists because each group sees the world a little differently and uses knowledge differently. Research often proceeds in a top-down fashion. Researchers generate questions to be studied and tend to generalize their findings to large groups (e.g., “best practice”). In contrast, practitioners serve real people and tend to use interventions that work in individuals’ real-world contexts. Fortunately, a general consensus supported by the National Institutes of Health (<https://ncats.nih.gov/translation>) has coalesced around the need to move basic science from the laboratory to sustainable, practical, effective implementation. **Translational research**, or research “from bench to bedside” (Woolf, 2008), is the term commonly used to describe the spectrum of steps involved in this process. Originating from within the field of medicine, translational research starts with basic questions about mechanisms of action and translates knowledge gleaned from laboratory studies, which sometimes use animal models, into interventions with humans. An example of basic research might be identifying biomarkers for diabetes, while clinical research might involve the development and testing of biomarker assessments in controlled clinical trials as well as in real-world public health settings. Throughout the process, knowledge is refined and reassessed to allow for accurate information about individual or group differences to emerge and reshape interventions. Ultimately,

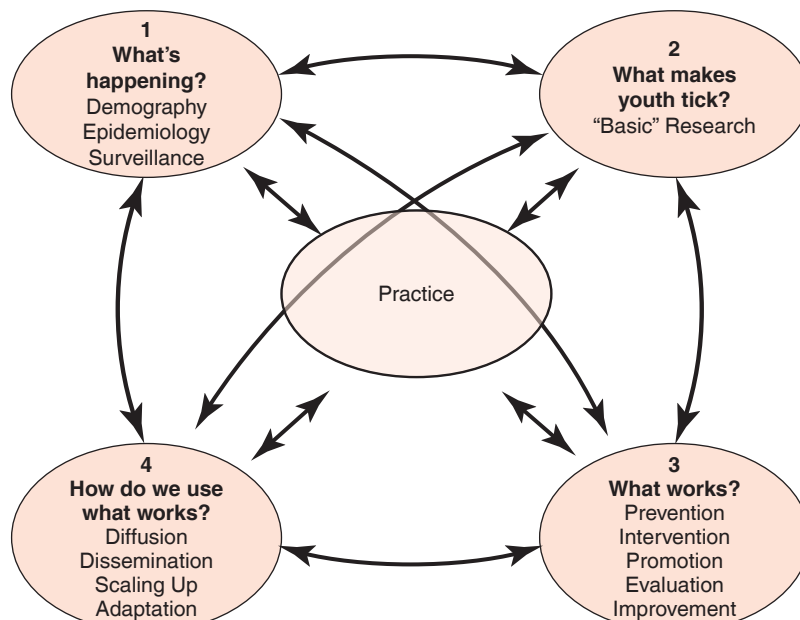
dissemination and implementation of innovations are translated into policy for appropriate patient groups (Rubio et al., 2010).

The translational research approach has been applied to many fields, from medicine (Waxman, 2005; Woolf, 2008) to developmental psychopathology (Cicchetti & Toth, 2006) to prevention science (Fishbein, Ridenour, Stahl, & Sussman, 2016). Findings from each step in the spectrum generate new questions, and each step requires distinct kinds of research methods. Knowledge from other disciplines is integrated into this process if it pertains to the problem under investigation. The field of molecular biology and **epigenetics** (see Chapter 2), for example, can inform many questions about attachment in early childhood. A key feature of translational research, called *back translation*, describes the recursive process of applying research findings to real-world settings, making revisions based on evidence, and then reassessing.

One model of translational research applied to youth development (see Figure 1.4) illustrates the multidirectional nature of this work (Hamilton, 2015).

Consider a hypothetical example using this framework. Epidemiological survey data show a higher rate of school dropout for certain populations (Quadrant 1). Basic research suggests links among dropping out, drug abuse, and unsupportive adult relationships (Quadrant 2). Prevention and treatment programs are developed to reduce the risk factors for dropping out and to enhance the protective factors that engage students in schooling (see the Focus on Developmental Psychopathology section). These programs are studied in well-controlled implementations, and results are used to improve the efficacy, accessibility, and acceptability

FIGURE 1.4 A model of translational research on youth development.



SOURCE: Hamilton, S. F. (2015). Translational research and youth development. *Applied Developmental Science*, 19, 60-73.