

Licensed to:



WAYNE WEITEN

PSYCHOLOGY

Themes and Variations

9E

This is an electronic version of the print textbook. Due to electronic rights restrictions, some third party content may be suppressed. Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. The publisher reserves the right to remove content from this title at any time if subsequent rights restrictions require it. For valuable information on pricing, previous editions, changes to current editions, and alternate formats, please visit www.cengage.com/highered to search by ISBN#, author, title, or keyword for materials in your areas of interest.

CENGAGE **brain**

Psychology: Themes and Variations, Ninth Edition
Wayne Weiten

Publisher/Editor: Jon-David Hague
Developmental Editor: Trina Tom
Senior Developmental Editor: Kristin Makarewycz
Assistant Editor: Kelly Miller
Editorial Assistant: Jessica Alderman
Media Editor: Lauren Keyes
Marketing Manager: Elizabeth Rhoden
Marketing Coordinator: Janay Pryor
Marketing Communications Manager: Laura Localio
Senior Content Project Manager: Pat Waldo
Design Director: Rob Hugel
Senior Art Director: Vernon Boes
Print Buyer: Judy Inouye
Rights Acquisitions Specialist: Dean Dauphinais
Production Service: Joan Keyes, Dovetail Publishing Services
Text Designer: Liz Harasymczuk
Photo Researcher: Terri Wright
Text Researcher: Sue C. Howard
Copy Editor: Jackie Estrada
Cover Designer: Paula Goldstein
Cover Image: Masterfile Royalty Free
Compositor: Graphic World Inc.

© 2013, 2011 Wadsworth, Cengage Learning

ALL RIGHTS RESERVED. No part of this work covered by the copyright herein may be reproduced, transmitted, stored, or used in any form or by any means graphic, electronic, or mechanical, including but not limited to photocopying, recording, scanning, digitizing, taping, Web distribution, information networks, or information storage and retrieval systems, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without the prior written permission of the publisher.

For product information and technology assistance, contact us at
Cengage Learning Customer & Sales Support, 1-800-354-9706.

For permission to use material from this text or product,
submit all requests online at www.cengage.com/permissions.

Further permissions questions can be e-mailed to
permissionrequest@cengage.com.

Library of Congress Control Number: 2011937544

Student Edition:

ISBN-13: 978-1-111-35474-9

ISBN-10: 1-111-35474-X

Loose-leaf Edition:

ISBN-13: 978-1-111-83747-1

ISBN-10: 1-111-83747-3

Wadsworth

20 Davis Drive
Belmont, CA 94002-3098
USA

Cengage Learning is a leading provider of customized learning solutions with office locations around the globe, including Singapore, the United Kingdom, Australia, Mexico, Brazil, and Japan. Locate your local office at www.cengage.com/global.

Cengage Learning products are represented in Canada by Nelson Education, Ltd.

To learn more about Wadsworth, visit www.cengage.com/Wadsworth

Purchase any of our products at your local college store or at our preferred online store www.CengageBrain.com.

Printed in Canada

1 2 3 4 5 6 7 15 14 13 12 11

1

The Evolution of Psychology

Psychology's Early History

A New Science Is Born: The Contributions of Wundt and Hall
The Battle of the "Schools" Begins: Structuralism Versus
Functionalism

Freud Brings the Unconscious into the Picture

Watson Alters Psychology's Course: Behaviorism Makes
Its Debut

Skinner Questions Free Will as Behaviorism Flourishes
The Humanists Revolt

Psychology's Modern History

Psychology Comes of Age as a Profession

Psychology Returns to Its Roots: Renewed Interest in Cognition
and Physiology

Psychology Broadens Its Horizons: Increased Interest in
Cultural Diversity

Psychology Adapts: The Emergence of Evolutionary Psychology
Psychology Moves in a Positive Direction

ILLUSTRATED OVERVIEW of Psychology's History

Psychology Today: Vigorous and Diversified

Research Areas in Psychology

Professional Specialties in Psychology

Seven Unifying Themes

Themes Related to Psychology as a Field of Study

Themes Related to Psychology's Subject Matter

PERSONAL APPLICATION • Improving Academic Performance

Developing Sound Study Habits

Improving Your Reading

Getting More Out of Lectures

Improving Test-Taking Strategies

CRITICAL THINKING APPLICATION • Developing Critical Thinking Skills: An Introduction

The Need to Teach Critical Thinking

An Example

Practice Test

Media Resources

© Richard Bryant/Arcaid/Corbis



What is psychology, and why is it worth your time to study? Let me approach these questions by sharing a couple of stories with you.

In 2005, Greg Hogan, a college sophomore, briefly achieved national notoriety when he was arrested for a crime. Greg wasn't anybody's idea of a likely criminal. He was the son of a Baptist minister and the president of his class. He played the cello in the university orchestra. He even worked part-time in the chaplain's office. So it shocked everybody who knew Greg when police arrested him at his fraternity house for bank robbery.

Earlier that day, Greg had faked having a gun and made away with over \$2800 from a local bank. His reason? Over a period of months he had lost \$5000 playing poker on the Internet. His lawyer said Greg's gambling habit had become "an addiction" (Dissell, 2005; McLoughlin & Paquet, 2005).

Greg eventually entered a clinic for treatment of his gambling problem. In a way, he was lucky—at least he got help.



Pergament, a 19-year-old community college student in Long Island, New York, wasn't so fortunate. Moshe was shot to death after brandishing a gun at a police officer. The gun turned out to be plastic. On the front seat of his car was a note that began, "Officer, it was a plan. I'm sorry to get you involved. I just needed to die." Moshe had just lost \$6000 betting on the World Series. His death was what people in law enforcement call "suicide by cop" (Lindsay & Lester, 2004).

These stories are at the extreme edge of a trend that concerns many public officials and mental health professionals: The popularity of gambling—from lotteries to sports betting to online poker—is booming, especially among the young (Jacobs, 2004). College students seem to be leading the way. To some observers, gambling on college campuses has become an "epidemic." Student bookies on some campuses make tens of thousands of dollars a year taking sports bets from other students. Television shows like *The World Series of Poker* are marketed squarely at college-student audiences. Poker sites on



Paradox: Psychology has a long past, but a short history.

the web invite students to win their tuition by gambling online.

For most people, gambling is a relatively harmless— if sometimes expensive—pastime. However, estimates suggest that 5%–6% of teens and young adults develop serious problems with gambling—two to four times the rate for older adults (Jacobs, 2004; Petry, 2005; Winters et al., 2004). The enormous growth of pathological gambling among young people raises a host of questions. Is gambling dangerous? Can it really be addictive? What is an addiction, anyway? If pathological gamblers abuse drugs or commit crimes, is gambling the cause of their troubles, or is it a symptom of a deeper problem? Perhaps most critically of all, why do some people become pathological gamblers while the great majority do not? Every day millions of people in the United States play the lottery, bet on sports, or visit casinos without apparent harm. Yet others can't seem to stop gambling until they have lost everything—their savings, their jobs, their homes, and their self-respect. Why? What causes such perplexing, self-destructive behavior?

Psychology is about questions like these. More generally, psychology is about understanding *all* the things we do. All of us wonder sometimes about the reasons underlying people's behavior—why it's hard to diet, why we procrastinate about studying, why we fall in love with one person rather than another. We wonder why some people are outgoing while others are shy. We wonder why we sometimes do things that we know will bring us pain and anguish, whether it's clinging to a destructive relationship or losing our tuition money in a game of Texas Hold 'Em. The study of psychology is about all these things, and infinitely more.

Many of psychology's questions have implications for our everyday lives. For me, this is one of the field's major attractions—*psychology is practical*. Consider the case of gambling. Pathological gamblers suffer all kinds of misery, yet they can't seem to stop. Listen to the anguish of a gambler named Steve: "Over the past 2 years I have lost literally thousands . . . I have attempted to give up time after time after time, but failed every time. . . . I have debts around my neck which are destroying mine and my family's life. . . . I just want a massive light to be turned on with a message saying, 'This way to your old life, Steve'" (SJB, 2006).

What is the best way to help someone like Steve? Should he join a group like Gamblers Anonymous?

Does counseling work? Are there drugs that can help? By probing the why's and how's of human behavior, psychology can help us find answers to pressing questions like these, as well as issues that affect each of us every day. You will see the practical side of psychology throughout this book, especially in the Personal Applications at the ends of chapters. These Applications focus on everyday problems, such as coping more effectively with stress, improving self-control, and dealing with sleep difficulties.

Beyond its practical value, psychology is worth studying because it provides a powerful *way of thinking*. All of us make judgments every day about why people do the things they do. For example, we might think that pathological gamblers are weak willed, or irrational, or just too dumb to understand that the odds are stacked against them. Or we might believe they are in the grip of an addiction that simply overpowers them. How do we decide which of these judgments—if any—are right?

Psychologists are committed to investigating questions about human behavior in a scientific way. This means that they seek to formulate precise questions about behavior and then test possible answers through systematic observation. This commitment to testing ideas means that psychology provides a means of building knowledge that is relatively accurate and dependable. It also provides a basis for assessing the assertions we hear every day about behavior, from friends and family, as well as in the popular media. Although most people probably don't think about it much, psychology is in the news all the time—in newspapers and magazines, on TV, radio, and the Internet. Unfortunately, this coverage is often distorted or grossly oversimplified, so that misinformation is commonplace. Thus, many "truisms" about behavior come to be widely believed when they really are misconceptions or myths. A small sampling of some popular myths related to psychology are shown in **Table 1.1**. This list of common misconceptions comes from an excellent book titled *50 Great Myths of Popular Psychology* (Lilienfeld et al., 2010). In the pages to come we'll touch on a number of misconceptions about psychology and provide more accurate, science-based information on these matters. For example, in Chapter 3 you will learn that the idea that people use only 10% of their brains is utter nonsense. Recent research suggests that the best way to dispel students' misconceptions is to confront them head on and provide a direct refutation (Kowalski & Taylor, 2009). Hence, throughout this book you will find a feature called Reality Checks that will highlight common fallacies and counter them with



© Sashkin/Shutterstock

Table 1.1 Popular Myths Related to Psychology

Myth	Relevant Chapter
Most people use only 10% of their brain power.	Chapter 3
Playing Mozart's music to infants boosts their intelligence.	Chapter 3
Subliminal messages can persuade people to purchase products.	Chapter 4
Hypnosis is a unique "trance" state that differs in kind from wakefulness.	Chapter 5
Hypnosis is useful for retrieving memories of forgotten events.	Chapter 7
The polygraph ("lie detector") test is an accurate means of detecting dishonesty.	Chapter 10
Opposites attract: We are most romantically attracted to people who differ from us.	Chapter 13
People with schizophrenia have multiple personalities.	Chapter 15
A large portion of criminals successfully use the insanity defense.	Chapter 15

SOURCE: Based on Lilienfeld, S. O., Lynn, S. J., Ruscio, J., & Beyerstein, B. L. (2010). *50 great myths of popular psychology: Shattering widespread misconceptions about human behavior*. Malden, MA: Wiley-Blackwell.

more accurate, realistic information. The Reality Check features will be found adjacent to relevant material.

As you go through this course, I hope you'll come to share my enthusiasm for psychology as a fascinating and immensely practical field of study. Let's begin our exploration by seeing how psychology has evolved from early speculations about behavior to a modern science. By looking at this evolution, you'll

better understand psychology as it is today, a sprawling, multifaceted science and profession. We'll conclude our introduction with a look at seven unifying themes that will serve as connecting threads in the chapters to come. The chapter's Personal Application will review research that provides insights into how to be an effective student. Finally, the Critical Thinking Application will discuss how critical thinking skills can be enhanced.

Psychology's Early History

Psychology's story is one of people groping toward a better understanding of themselves. As psychology has evolved, its focus, methods, and explanatory models have changed. In this section we'll look at psychology's early years, as the discipline developed from philosophical speculations about the mind into a research-based science.

The term *psychology* comes from two Greek words, *psyche*, meaning the soul, and *logos*, referring to the study of a subject. These two Greek roots were first put together to define a topic of study in the 16th century, when *psyche* was used to refer to the soul, spirit, or mind, as distinguished from the body (Boring, 1966). Not until the early 18th century did the term *psychology* gain more than rare usage among scholars. By that time it had acquired its literal meaning, "the study of the mind."

Of course, psychology has a long past in that people have always wondered about the mysteries of

the mind. In a way, psychology is as old as the human race. But it has a relatively short history, as psychology started to emerge as a scientific discipline only about 140 years ago.

A New Science Is Born: The Contributions of Wundt and Hall



Psychology's intellectual parents were the disciplines of *philosophy* and *physiology*. By the 1870s a small number of scholars in both fields were actively exploring questions about the mind. How are bodily sensations turned into a mental awareness of the outside world? Are people's perceptions of the world accurate reflections of reality? How do mind and body interact? The philosophers and physiologists who were interested in the mind viewed such

KEY LEARNING GOALS

- 1.1** Summarize Wundt's and Hall's accomplishments and contributions to psychology.
- 1.2** Describe the chief tenets of structuralism and functionalism and their impact on the development of psychology.
- 1.3** Articulate Freud's principal ideas and why they inspired controversy.
- 1.4** Trace the development of behaviorism and assess Watson's impact on the evolution of psychology.
- 1.5** Summarize Skinner's key insights and explain the emergence of humanism and its philosophy.



Wilhelm Wundt 1832–1920

“Physiology informs us about those life phenomena that we perceive by our external senses. In psychology, the person looks upon himself as from within and tries to explain the interrelations of those processes that this internal observation discloses.”

© Cengage Learning 2013

questions as fascinating issues *within* their respective fields. It was a German professor, Wilhelm Wundt (1832–1920), who eventually changed this view. Wundt mounted a campaign to make psychology an independent discipline rather than a stepchild of philosophy or physiology.

The time and place were right for Wundt’s appeal. German universities were in a healthy period of expansion. Resources were available for new disciplines. Furthermore, the intellectual climate favored the scientific approach that Wundt advocated. Hence, his proposals were well received by the academic community. In 1879 Wundt succeeded in establishing the first formal laboratory for research in psychology at the University of Leipzig. In deference to this landmark event, historians have christened 1879 as psychology’s “date of birth.” Soon afterward, in 1881, Wundt established the first journal devoted to publishing research on psychology. All in all, Wundt’s campaign was so successful that today he is widely characterized as the founder of psychology.

Wundt’s conception of psychology was influential for decades. Borrowing from his training in physiology, Wundt (1874) declared that the new psychology should be a *science* modeled after fields such as physics and chemistry. What was the subject matter of the new science? According to Wundt, psychology’s primary focus was *consciousness*—the awareness of immediate experience. *Thus, psychology became the scientific study of conscious experience.* This orientation kept psychology focused on the mind

and mental processes. But it demanded that the methods psychologists used to investigate the mind be as scientific as those of chemists or physicists.

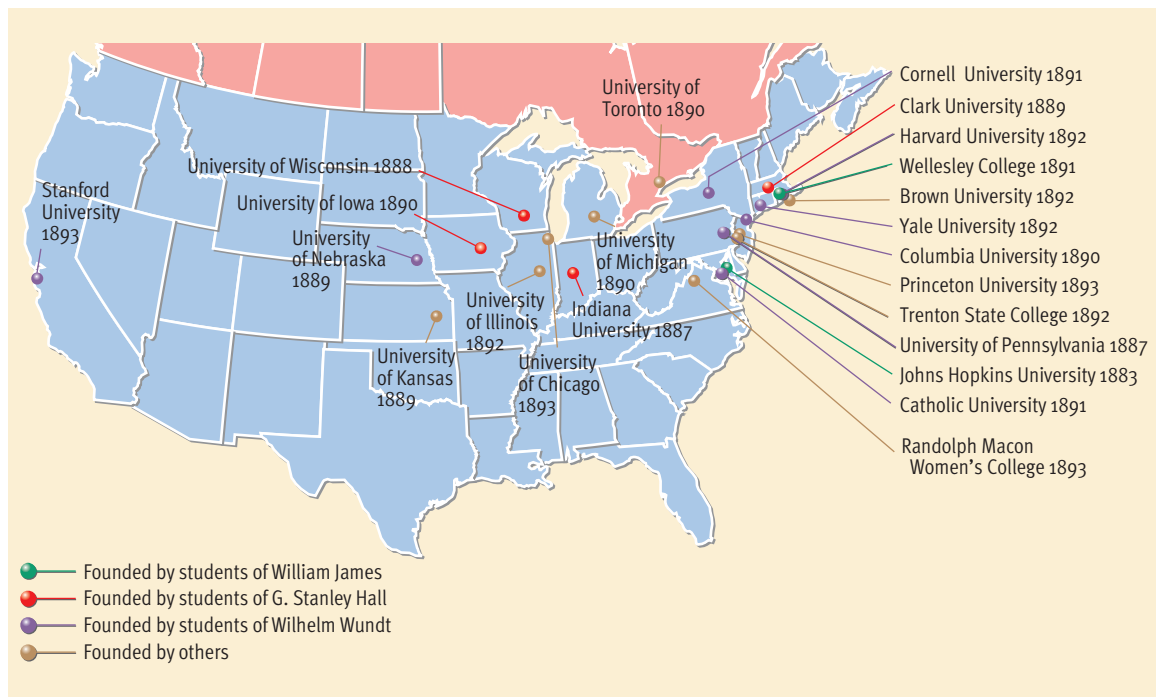
Wundt was a tireless, dedicated scholar who generated an estimated 54,000 pages of books and articles in his career (Bringmann & Balk, 1992). Studies in his lab focused on attention, memory, sensory processes, and reaction-time experiments that provided estimates of the duration of various mental processes (Fuchs & Milar, 2003). Outstanding young scholars, including many Americans, came to Leipzig to study under Wundt. Many of his students then fanned out across Germany and America, establishing the research laboratories that formed the basis for the new, independent science of psychology. Indeed, it was in North America that Wundt’s new science grew by leaps and bounds. Between 1883 and 1893, some 23 new psychological research labs sprang up in the United States and Canada, at the schools shown in **Figure 1.1** (Benjamin, 2000). Many of the labs were started by Wundt’s students, or by his students’ students.

G. Stanley Hall (1846–1924), who studied briefly with Wundt, was a particularly important contributor to the rapid growth of psychology in America. Toward the end of the 19th century, Hall reeled off a series of “firsts” for American psychology. To begin with, he established America’s first research laboratory in psychology at Johns Hopkins University in 1883. Four years later he launched America’s first psychology journal. Furthermore, in 1892 he was

Figure 1.1

Early research laboratories in North America.

This map highlights the location and year of founding for the first 23 psychological research labs established in North American colleges and universities. As the color coding shows, a great many of these labs were founded by the students of Wilhelm Wundt, G. Stanley Hall, and William James. (Based on Benjamin, 2000)



© Cengage Learning 2013

the driving force behind the establishment of the American Psychological Association (APA) and was elected its first president. Today the APA is the world's largest organization devoted to the advancement of psychology. It has over 150,000 members and affiliates. Hall never envisioned such a vast membership when he and 26 others set up their new organization.

The Battle of the “Schools” Begins: Structuralism Versus Functionalism

1a



While reading about how psychology became a science, you might have imagined that psychologists became a unified group of scholars who busily added new discoveries to an uncontested store of “facts.” In reality, no science works that way. Competing schools of thought exist in most scientific disciplines. Sometimes the disagreements among these schools are sharp. Such diversity in thought is natural and often stimulates enlightening debate. In psychology, the first two major schools of thought, *structuralism* and *functionalism*, were entangled in the field's first great intellectual battle.

Structuralism emerged through the leadership of Edward Titchener, an Englishman who emigrated to the United States in 1892. He taught for decades at Cornell University. Titchener earned his degree in Wundt's Leipzig laboratory and expressed great admiration for Wundt's work. However, he brought his own version of Wundt's psychology to America (Hilgard, 1987; Thorne & Henley, 1997). **Structuralism was based on the notion that the task of psychology is to analyze consciousness into its basic elements and investigate how these elements are related.** Just as physicists were studying how matter is made up of basic particles, the structuralists wanted to identify and examine the fundamental components of conscious experience, such as sensations, feelings, and images.

Although the structuralists explored many questions, most of their work concerned sensation and perception in vision, hearing, and touch. To examine the contents of consciousness, the structuralists depended on the method of **introspection, or the careful, systematic self-observation of one's own conscious experience.** As practiced by the structuralists, introspection required training to make the *subject*—the person being studied—more objective and more aware. Once trained, participants were typically exposed to auditory tones, optical illusions, and visual stimuli under carefully controlled and systematically varied conditions and were asked to analyze what they experienced.

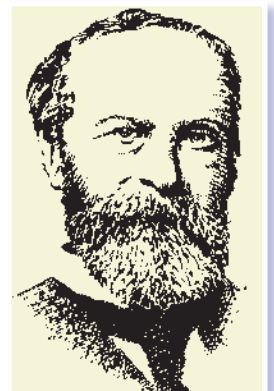


Archives of the History of American Psychology, University of Akron, Akron, Ohio.

The functionalists took a different view of psychology's task. **Functionalism was based on the belief that psychology should investigate the function or purpose of consciousness, rather than its structure.** The chief impetus for the emergence of functionalism was the work of William James (1842–1910), a brilliant American scholar (and brother of novelist Henry James). James's formal training was in medicine. However, he did not find medicine to be intellectually challenging. He also felt he was too sickly to pursue a medical practice (Ross, 1991). So, when an opportunity arose in 1872, he joined the faculty of Harvard University to pursue a less arduous career in academia. Medicine's loss proved to be psychology's gain, as James quickly became an intellectual giant in the field. James's landmark book, *Principles of Psychology* (1890), became standard reading for generations of psychologists. It is perhaps the most influential text in the history of psychology (Weiten & Wight, 1992).

James's thinking illustrates how psychology, like any field, is deeply embedded in a network of cultural and intellectual influences. James had been impressed with Charles Darwin's (1859, 1871) concept of *natural selection*. According to the principle of **natural selection, heritable characteristics that provide a survival or reproductive advantage are more likely than alternative characteristics to be passed on to subsequent generations and thus come to be “selected” over time.** This cornerstone notion of Darwin's evolutionary theory suggested that the typical characteristics of a species must

The establishment of the first research laboratory in psychology by Wilhelm Wundt (far right) marked the birth of psychology as a modern science.



William James
1842–1910

“It is just this free water of consciousness that psychologists resolutely overlook.”

© Cengage Learning 2013

serve some purpose. Applying this idea to humans, James (1890) noted that consciousness obviously is an important characteristic of our species. Hence, he contended that psychology should investigate the *functions* rather than the *structure* of consciousness.

James also argued that the structuralists' approach missed the real nature of conscious experience. Consciousness, he argued, consists of a continuous *flow* of thoughts. In analyzing consciousness into its *elements*, the structuralists were looking at static points in that flow. James wanted to understand the flow itself, which he called the *stream of consciousness*. Today, people take this metaphorical description of mental life for granted, but at the time it was a revolutionary insight. As Leary (2003) put it, "No longer was consciousness depicted as some kind of encompassing mental container more or less full of such 'contents' as sensations, images, ideas, thoughts, feelings, and the like; rather it was now portrayed as a continually ongoing, wholistic experience or process" (p. 25). James went on to provide enormously influential analyses of many

crucial issues in the emerging field of psychology. Among other things, his discussions of how people acquired *habits* laid the groundwork for progress in the study of learning, and his conception of the *self* provided the foundation for subsequent theories of personality (Leary, 2003).

Whereas structuralists naturally gravitated to the research lab, functionalists were more interested in how people adapt their behavior to the demands of the real world around them. This practical slant led them to introduce new subjects into psychology. Instead of focusing on sensation and perception, functionalists such as James McKeen Cattell and John Dewey began to investigate mental testing, patterns of development in children, the effectiveness of educational practices, and behavioral differences between the sexes. These new topics may have played a role in attracting the first women into the field of psychology (see **Figure 1.2**).

The impassioned advocates of structuralism and functionalism saw themselves as fighting for high stakes: the definition and future direction of the

Figure 1.2

Women pioneers in the history of psychology.

Women have long made major contributions to the development of psychology (Milar, 2000; Russo & Denmark, 1987), and today nearly half of all psychologists are female. As in other fields, however, women have often been overlooked in histories of psychology (Furumoto & Scarborough, 1986). The three psychologists profiled here demonstrate that women have been making significant contributions to psychology almost from its beginning—despite formidable barriers to pursuing their academic careers.

Photos courtesy of the Archives of the History of American Psychology, University of Akron, Akron, Ohio.

**Mary Whiton Calkins
(1863–1930)**



Mary Calkins, who studied under William James, founded one of the first dozen psychology laboratories in America at Wellesley College in 1891, invented a widely used technique for studying memory, and became the first woman to serve as president of the American Psychological Association in 1905. Ironically, however, she never received her Ph.D. in psychology. Because she was a woman, Harvard University only reluctantly allowed her to take graduate classes as a "guest student." When she completed the requirements for her Ph.D., Harvard would only offer her a doctorate from its undergraduate sister school, Radcliffe. Calkins felt that this decision perpetuated unequal treatment of the sexes, so she refused the Radcliffe degree.

**Margaret Floy Washburn
(1871–1939)**



Margaret Washburn was the first woman to receive a Ph.D. in psychology. She wrote an influential book, *The Animal Mind* (1908), which served as an impetus to the subsequent emergence of behaviorism and was standard reading for several generations of psychologists. In 1921 she became the second woman to serve as president of the American Psychological Association. Washburn studied under James McKeen Cattell at Columbia University, but like Mary Calkins, she was only permitted to take graduate classes unofficially, as a "hearer." Hence, she transferred to Cornell University, which was more hospitable toward women, and completed her doctorate in 1894. Like Calkins, Washburn spent most of her career at a college for women (Vassar).

**Leta Stetter Hollingworth
(1886–1939)**



Leta Hollingworth did pioneering work on adolescent development, mental retardation, and gifted children. Indeed, she was the first person to use the term *gifted* to refer to youngsters who scored exceptionally high on intelligence tests. Hollingworth (1914, 1916) also played a major role in debunking popular theories of her era that purported to explain why women were "inferior" to men. For instance, she conducted a study refuting the myth that phases of the menstrual cycle are reliably associated with performance decrements in women. Her careful collection of objective data on gender differences forced other scientists to subject popular, untested beliefs about the sexes to skeptical, empirical inquiry.

new science of psychology. Their war of ideas continued energetically for many years. Who won? Most historians give the edge to functionalism. Both schools of thought gradually faded away. However, functionalism fostered the development of two important descendants: behaviorism and applied psychology (Green, 2009). We will discuss both momentarily.

Freud Brings the Unconscious into the Picture

1a, 10a



Sigmund Freud (1856–1939) was an Austrian physician. Early in his career he dreamed of achieving fame by making an important discovery. His determination was such that in medical school he dissected 400 male eels to prove for the first time that they had testes. His work with eels did not make him famous, but his subsequent work with people did. Indeed, his theories made him one of the most controversial intellectual figures of modern times.

Freud's (1900, 1924, 1933) approach to psychology grew out of his efforts to treat mental disorders. In his medical practice, Freud treated people troubled by psychological problems such as irrational fears, obsessions, and anxieties with an innovative procedure he called *psychoanalysis* (described in detail in Chapter 16). Decades of experience probing into his patients' lives provided much of the inspiration for Freud's theory. He also gathered material by looking inward and examining his own anxieties, conflicts, and desires.

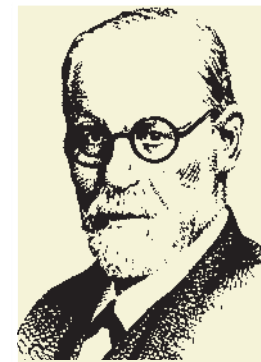
His work with patients and his own self-exploration persuaded Freud of the existence of what he called the unconscious. According to Freud, **the unconscious contains thoughts, memories, and desires that are well below the surface of conscious awareness but that nonetheless exert great influence on behavior.** Freud based his concept of the unconscious on a variety of observations. For instance, he noticed that seemingly meaningless slips of the tongue (such as "I decided to take a summer school *curse*") often appeared to reveal a person's true feelings. He also noted that his patients' dreams often seemed to express important feelings they were unaware of. Knitting these and other observations together, Freud eventually concluded that psychological disturbances are largely caused by personal conflicts existing at an unconscious level. More generally, his *psychoanalytic theory attempts to explain personality, motivation, and mental disorders by focusing on unconscious determinants of behavior.*

Freud's concept of the unconscious was not entirely new, but he put it on the map for the general

population and elaborated on it like never before (Lothane, 2006). It is important to emphasize that the concept of the unconscious was a major departure from the prevailing belief that people are fully aware of the forces affecting their behavior. In arguing that behavior is governed by unconscious forces, Freud made the disconcerting suggestion that people are not masters of their own minds. Other aspects of Freud's theory also stirred up debate. For instance, he proposed that behavior is greatly influenced by how people cope with their sexual urges. At a time when people were far less comfortable discussing sexual issues than they are today, even scientists were offended and scandalized by Freud's emphasis on sex. Small wonder, then, that Freud was soon engulfed in controversy.

In part because of its controversial nature, Freud's theory was slow to gain influence. However, he was a superb and prolific writer who campaigned vigorously for his psychoanalytic movement (Messer & McWilliams, 2003). As a result, his approach gradually won acceptance within medicine, attracting prominent followers such as Carl Jung and Alfred Adler. Important public recognition from psychology came in 1909, when G. Stanley Hall invited Freud to give a series of lectures at Clark University in Massachusetts (see the photo below).

By 1920 psychoanalytic theory was widely known around the world. However, it continued to meet with considerable resistance in psychology (Fancher, 2000). Most psychologists contemptuously viewed psychoanalytic theory as unscientific speculation that would eventually fade away (Hornstein, 1992). They turned out to be wrong. Psychoanalytic ideas steadily gained credence in the culture at large, influencing thought in medicine, the arts, and literature (Rieber, 1998). According to Hornstein (1992), by the 1940s, "Psychoanalysis was becoming so popular that it threatened



**Sigmund Freud
1856–1939**

"The unconscious is the true psychological reality; in its innermost nature it is as much unknown to us as the reality of the external world."

A portrait taken at the famous Clark University psychology conference, September 1909. Pictured are Freud, G. Stanley Hall, and four of Freud's students and associates. Seated, left to right: Freud, Hall, and Carl Jung; standing: Abraham Brill, Ernest Jones, and Sandor Ferenczi.



CONCEPT CHECK 1.1

Understanding the Implications of Major Theories: Wundt, James, and Freud

Check your understanding of the implications of some of the major theories reviewed in this chapter by indicating who is likely to have made each of the statements quoted below. Choose from the following theorists: (a) Wilhelm Wundt, (b) William James, and (c) Sigmund Freud. You'll find the answers in Appendix A in the back of the book.

- _____ 1. "He that has eyes to see and ears to hear may convince himself that no mortal can keep a secret. If the lips are silent, he chatters with his fingertips; betrayal oozes out of him at every pore. And thus the task of making conscious the most hidden recesses of the mind is one which it is quite possible to accomplish."
- _____ 2. "The book which I present to the public is an attempt to mark out a new domain of science. . . . The new discipline rests upon anatomical and physiological foundations. . . . The experimental treatment of psychological problems must be pronounced from every point of view to be in its first beginnings."
- _____ 3. "Consciousness, then, does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly. . . . It is nothing jointed; it flows. A 'river' or 'stream' are the metaphors by which it is most naturally described."

to eclipse psychology entirely" (p. 258). Thus, the widespread popular acceptance of psychoanalytic theory essentially forced psychologists to apply their scientific methods to the topics Freud had studied: personality, motivation, and abnormal behavior. As they turned to these topics, many of them saw merit in some of Freud's notions (Rosenzweig, 1985). Psychoanalytic theory continued to generate heated debate, but it survived to become an influential theoretical perspective. Today, many psychoanalytic concepts have filtered into the mainstream of psychology (Luborsky & Barrett, 2006; Pincus, 2006; Westen, Gabbard, & Ortigo, 2008).



John B. Watson
1878–1958

"The time seems to have come when psychology must discard all references to consciousness."

© Cengage Learning 2013

Watson Alters Psychology's Course: Behaviorism Makes Its Debut

1a, 5b



One reason psychoanalysis struggled to gain acceptance within psychology was that it conflicted in many basic ways with the tenets of *behaviorism*, a new school of thought that gradually became dominant within psychology between 1913 and the late 1920s. Founded by John B. Watson (1878–1958), **behaviorism is a theoretical orientation based on the premise that scientific psychology should study only observable behavior.** It is important to understand what a radical change this definition

represented. Watson (1913, 1919) proposed that psychologists *abandon the study of consciousness altogether* and focus exclusively on behaviors that they could observe directly. In essence, he was trying to redefine what scientific psychology should be about.

Why did Watson argue for such a fundamental shift in direction? Because to him, the power of the scientific method rested on the idea of *verifiability*. In principle, scientific claims can always be verified (or disproved) by anyone who is able and willing to make the required observations. However, this power depends on studying things that can be observed objectively. Otherwise, the advantage of using the scientific approach—replacing vague speculation and personal opinion with reliable, exact knowledge—is lost. In Watson's view, mental processes are not a proper subject for scientific study because they are ultimately private events. After all, no one can see or touch another's thoughts. Consequently, if psychology was to be a science, it would have to give up consciousness as its subject matter and become instead the *science of behavior*.

Behavior refers to any overt (observable) response or activity by an organism. Watson asserted that psychologists could study anything that people do or say—shopping, playing chess, eating, complimenting a friend. However, according to Watson, they could *not* study scientifically the thoughts, wishes, and feelings that might accompany these observable behaviors. Obviously, psychology's shift away from the study of consciousness was incompatible with psychoanalytic theory. By the 1920s Watson had become an outspoken critic of Freud's views (Rilling, 2000). Proponents of behaviorism and psychoanalysis engaged in many heated theoretical debates in the ensuing decades.

Watson's radical reorientation of psychology did not end with his redefinition of its subject matter. He also staked out a rather extreme position on one of psychology's oldest and most fundamental questions: the issue of *nature versus nurture*. This age-old debate is concerned with whether behavior is determined mainly by genetic inheritance ("nature") or by environment and experience ("nurture"). To oversimplify, the question is this: Is a great concert pianist or a master criminal born, or made? Watson argued that each is made, not born. In other words, he downplayed the importance of heredity. He maintained that behavior is governed primarily by the environment. Indeed, he boldly claimed:

Give me a dozen healthy infants, well-formed, and my own special world to bring them up in and I'll guarantee to take any one at random and train him to become any

type of specialist I might select—doctor, lawyer, artist, merchant-chief, and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors. I am going beyond my facts and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years. (1924, p. 82)

For obvious reasons, Watson's tongue-in-cheek challenge was never put to a test. Admittedly, this widely cited quote oversimplified Watson's views on the nature-nurture issue (Todd & Morris, 1992). Yet his writings contributed greatly to the strong environmental slant that became associated with behaviorism (Horowitz, 1992).

Influenced by Ivan Pavlov's discovery of the conditioned reflex (see Chapter 6), the behaviorists eventually came to view psychology's mission as an attempt to relate overt behaviors ("responses") to observable events in the environment ("stimuli"). Because the behaviorists investigated stimulus-response relationships, the behavioral approach is often referred to as *stimulus-response (S-R) psychology*.

Behaviorism's stimulus-response approach contributed to the rise of animal research in psychology. Having deleted consciousness from their scope of concern, behaviorists no longer needed to study human participants who could report on their mental processes. Many psychologists thought that animals would make better research subjects anyway. One key reason was that experimental research is often more productive if experimenters can exert considerable *control* over their subjects. Otherwise, too many complicating factors enter into the picture and contaminate the experiment. Obviously, a researcher can have much more control over a lab rat or pigeon than over a human participant. Thus, the discipline that had begun its life a few decades earlier as the study of the mind now found itself heavily involved in the study of simple responses made by laboratory animals.

Although Watson's views shaped the evolution of psychology for many decades, he ended up watching the field's progress from the sidelines. Because of a heavily publicized divorce scandal in 1920, Watson was forced to resign from Johns Hopkins University (Buckley, 1994). Bitterly disappointed, he left academia at the age of 42, never to return. Psychology's loss proved to be the business world's gain, as Watson went on to become an innovative, successful advertising executive (Brewer, 1991; Coon, 1994). The advertising industry was just emerging as a national force in the 1920s, and Watson quickly became one of its most prominent practitioners at the

J. Walter Thompson agency. He pioneered fear appeals, testimonials, selling the "prestige" of products, and promotion of style over substance, all of which remain basic principles in modern marketing (Buckley, 1982). Moreover, "through an enormous output of books, magazine articles, and radio broadcasts he was able to establish himself as the public spokesman for the profession of psychology and an expert on subjects ranging from childrearing to economics. In effect, Watson became the first 'pop' psychologist" (Buckley, 1982, p. 217). So, ironically, Watson became the public face of the discipline that had banished him from its mainstream.

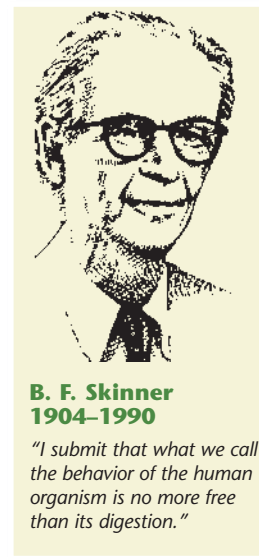
Skinner Questions Free Will as Behaviorism Flourishes 1a, 10b



The advocates of behaviorism and psychoanalysis tangled frequently during the 1920s, 1930s, and 1940s. As psychoanalytic thought slowly gained a foothold within psychology, many psychologists softened their stance on the acceptability of studying internal mental events. However, this movement toward the consideration of internal states was vigorously opposed by B. F. Skinner (1904–1990), an American psychologist whose thinking was influenced by the work of Ivan Pavlov and John B. Watson (Dinsmoor, 2004; Moore, 2005).

Skinner (1953) championed a return to Watson's strict focus on observable behavior. Skinner did not deny the existence of internal mental events. However, he insisted that they could not be studied scientifically. Moreover, there was no need to study them. According to Skinner, if the stimulus of food is followed by the response of eating, we can fully describe what is happening without making any guesses about whether the animal is experiencing hunger. Like Watson, Skinner also emphasized how environmental factors mold behavior.

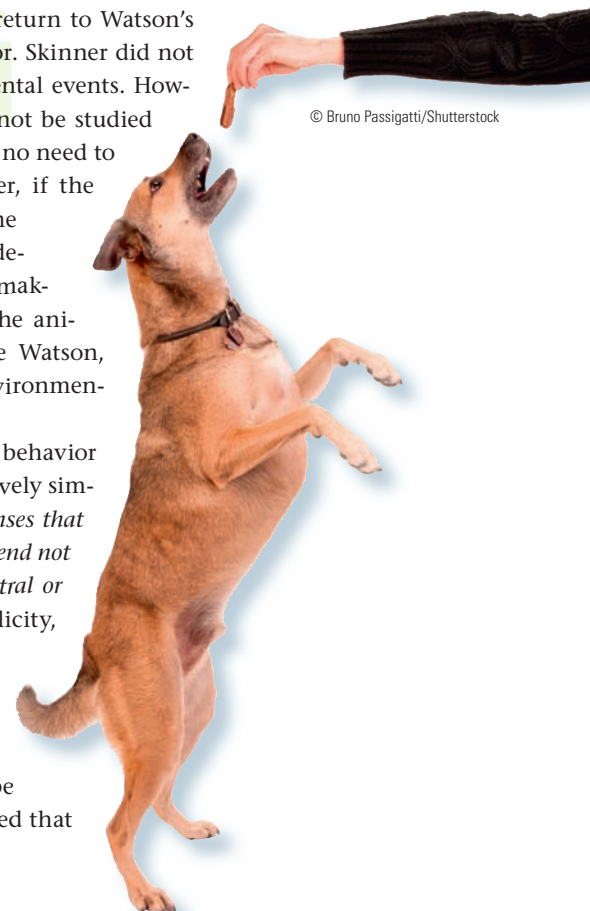
The fundamental principle of behavior documented by Skinner is deceptively simple: *Organisms tend to repeat responses that lead to positive outcomes, and they tend not to repeat responses that lead to neutral or negative outcomes.* Despite its simplicity, this principle turns out to be quite powerful. Working primarily with lab rats and pigeons trained in operant conditioning devices that came to be known as Skinner boxes, he showed that



B. F. Skinner
1904–1990

"I submit that what we call the behavior of the human organism is no more free than its digestion."

© Cengage Learning 2013



© Bruno Passigatti/Shutterstock

he could exert remarkable control over the behavior of animals by manipulating the outcomes of their responses. He was even able to train animals to perform unnatural behaviors. For example, he once trained some pigeons to play a credible version of Ping-Pong (see the video found within *PsykTrek*). Skinner's followers eventually showed that the principles uncovered in their animal research could be applied to complex human behaviors as well. Behavioral principles are now widely used in factories, schools, prisons, mental hospitals, and a variety of other settings (see Chapter 6).

Skinner's ideas had repercussions that went far beyond the debate among psychologists about what they should study. Skinner spelled out the full implications of his findings in his book *Beyond Freedom and Dignity* (1971). There he asserted that all behavior is fully governed by external stimuli. In other words, your behavior is determined in predictable ways by lawful principles, just as the flight of an arrow is governed by the laws of physics. Thus, if you believe that your actions are the result of conscious decisions, you're wrong. According to Skinner, people are controlled by their environment, not by themselves. In short, Skinner arrived at the conclusion that *free will is an illusion*.

As you can readily imagine, such a disconcerting view of human nature was not universally acclaimed. Like Freud, Skinner was the target of harsh criticism. Much of this criticism stemmed from misinterpretations of his ideas that were disseminated in the popular press (Rutherford, 2000). For example, his analysis of free will was often misconstrued as an attack on the concept of a free society—which it was not. He was often mistakenly condemned for advocating an undemocratic “scientific police state” (Dinsmore, 1992). Somehow, a myth also emerged that Skinner raised his daughter in a version of a



B. F. Skinner's daughter, Deborah, is shown here in her climate-controlled air crib, which Skinner invented as a substitute for a normal baby crib and play pen.

Skinner box and that this experience led her to be severely disturbed later in life. Despite all the misinformation and controversy, however, behaviorism flourished as the dominant school of thought in psychology during the 1950s and 1960s (Gilgen, 1982). Even today, when experts are asked to nominate psychology's most important contributors, Skinner's name is typically found at the top of the list (see **Figure 1.3**).

The Humanists Revolt

1a, 10c



By the 1950s, behaviorism and psychoanalytic theory had become the most influential schools of thought in psychology. However, many psychologists found these theoretical orientations unappealing. The principal charge hurled at both schools was that they were “dehumanizing.” Psychoanalytic theory was attacked for its belief that behavior is dominated by primitive, sexual urges. Behaviorism was criticized for its preoccupation with the study of simple animal behavior. Both theories were criticized because they suggested that people are not masters of their own destinies. Above all, many people argued, both schools of thought failed to recognize the unique qualities of *human* behavior.

Beginning in the 1950s, the diverse opposition to behaviorism and psychoanalytic theory blended into a loose alliance that eventually became a new school of thought called “humanism” (Bühler & Allen, 1972). In psychology, **humanism is a theo-**

Reality CHECK

Misconception

B. F. Skinner raised his daughter, Deborah, in a Skinner box, contributing to her becoming severely disturbed later in life, which led to her suicide.

Reality

Skinner did design an innovative crib called a “baby tender” for Deborah, which was featured in *Ladies' Home Journal* (Skinner, 1945; see the photo above). But it was not analogous to a Skinner box, was not used for experiments, and apparently was quite comfortable. Deborah grew up normally, was very close to her father, has not suffered from psychological problems as an adult, and is alive and well, working as an artist (Buzan, 2004).

Two Rankings of Important Figures in the History of Psychology			
Estes et al. (1990)		Haggbloom et al. (2002)	
Rank	Name	Rank	Name
1	B. F. Skinner	1	B. F. Skinner
2	Sigmund Freud	2	Jean Piaget
3	William James	3	Sigmund Freud
4	Jean Piaget	4	John B. Watson
5	G. Stanley Hall	5	Albert Bandura
6	Wilhelm Wundt	6	William James
7	Carl Rogers	6	Ivan Pavlov
8	John B. Watson	8	Kurt Lewin
9	Ivan Pavlov	9	Carl Rogers
10	E. L. Thorndike	9	E. L. Thorndike

Figure 1.3

Influential contributors in the history of psychology. The results of two surveys regarding the most important people in the history of psychology are shown here. In the 1990 survey, 93 chairpersons of psychology departments ranked psychology’s most influential contributors (Estes, Coston, & Fournet, 1990, as cited in Korn et al., 1991). In the 2002 survey, a sample of APS members were asked to identify the greatest psychologists of the 20th century (Haggbloom et al., 2002). As you can see, B. F. Skinner earned the top ranking in both surveys. Although these ratings of scholarly eminence are open to debate, these data should give you some idea of the relative impact of various figures discussed in this chapter.

SOURCES: List on left adapted from Korn, J. H., Davis, R., & Davis, S. F. (1991). Historians’ and chairpersons’ judgments of eminence among psychologists. *American Psychologist*, 46, 789–792. Copyright © 1991 by the American Psychological Association. List on right adapted from Haggbloom, S. J., et al. (2002). The 100 most eminent psychologists of the 20th century. *Review of General Psychology*, 6, 139–152. Copyright © 2002 by the Educational Publishing Foundation.

retical orientation that emphasizes the unique qualities of humans, especially their freedom and their potential for personal growth. Some of the key differences among the humanistic, psychoanalytic, and behavioral viewpoints are summarized in **Table 1.2**. It compares six influential contemporary theoretical perspectives in psychology.

Humanists take an *optimistic* view of human nature. They maintain that people are not pawns of either their animal heritage or their environmental circumstances. Furthermore, humanists say, because humans are fundamentally different from other animals, research on animals has little relevance to the understanding of human behavior

Table 1.2 Overview of Six Contemporary Theoretical Perspectives in Psychology

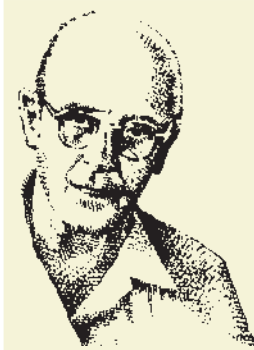
Perspective and Its Influential Period	Principal Contributors	Subject Matter	Basic Premise
Behavioral (1913–present)	John B. Watson Ivan Pavlov B. F. Skinner	Effects of environment on the overt behavior of humans and animals	Only observable events (stimulus-response relations) can be studied scientifically.
Psychoanalytic (1900–present)	Sigmund Freud Carl Jung Alfred Adler	Unconscious determinants of behavior	Unconscious motives and experiences in early childhood govern personality and mental disorders.
Humanistic (1950s–present)	Carl Rogers Abraham Maslow	Unique aspects of human experience	Humans are free, rational beings with the potential for personal growth, and they are fundamentally different from animals.
Cognitive (1950s–present)	Jean Piaget Noam Chomsky Herbert Simon	Thoughts; mental processes	Human behavior cannot be fully understood without examining how people acquire, store, and process information.
Biological/ Neuroscience (1950s–present)	James Olds Roger Sperry David Hubel Torsten Wiesel	Physiological bases of behavior in humans and animals	An organism’s functioning can be explained in terms of the bodily structures and biochemical processes that underlie behavior.
Evolutionary (1980s–present)	David Buss Martin Daly Margo Wilson Leda Cosmides John Tooby	Evolutionary bases of behavior in humans and animals	Behavior patterns have evolved to solve adaptive problems; natural selection favors behaviors that enhance reproductive success.

CONCEPT CHECK 1.2

Understanding the Implications of Major Theories: Watson, Skinner, and Rogers

Check your understanding of the implications of some of the major theories reviewed in this chapter by indicating who is likely to have made each of the statements quoted below. Choose from the following: (a) John B. Watson, (b) B. F. Skinner, and (c) Carl Rogers. You'll find the answers in Appendix A at the back of the book.

- _____ 1. "In the traditional view, a person is free. . . . He can therefore be held responsible for what he does and justly punished if he offends. That view, together with its associated practices, must be reexamined when a scientific analysis reveals unsuspected controlling relations between behavior and environment."
- _____ 2. "I do not have a Pollyanna view of human nature. . . . Yet one of the most refreshing and invigorating parts of my experience is to work with [my clients] and to discover the strongly positive directional tendencies which exist in them, as in all of us, at the deepest levels."
- _____ 3. "Our conclusion is that we have no real evidence of the inheritance of traits. I would feel perfectly confident in the ultimately favorable outcome of careful upbringing of a healthy, well-formed baby born of a long line of crooks, murderers and thieves, and prostitutes."



Carl Rogers
1902–1987

"It seems to me that at bottom each person is asking, 'Who am I, really? How can I get in touch with this real self, underlying all my surface behavior? How can I become myself?'"

© Cengage Learning 2013

(Davidson, 2000). The most prominent architects of the humanistic movement have been Carl Rogers (1902–1987) and Abraham Maslow (1908–1970). Rogers (1951) argued that human behavior is governed primarily by each individual's sense of self, or "self-concept"—which animals presumably lack. Both he and Maslow (1954) maintained that to fully understand people's behavior, psychologists must take into account the fundamental human drive toward personal growth. They asserted that people have a basic need to continue to evolve as human beings and to fulfill their potentials. In fact, the humanists

argued that many psychological disturbances are the result of thwarting these uniquely human needs.

Fragmentation and dissent have reduced the influence of humanism in recent decades. Some advocates, though, have predicted a renaissance for the humanistic movement (Taylor, 1999). To date, the humanists' greatest contribution to psychology has probably been their innovative treatments for psychological problems and disorders. For example, Carl Rogers pioneered a new approach to psychotherapy—called *person-centered therapy*—that remains extremely influential today (Kirschenbaum & Jourdan, 2005).

REVIEW OF KEY LEARNING GOALS

- 1.1** Psychology became an independent discipline when Wilhelm Wundt established the first psychological research laboratory in 1879 at Leipzig, Germany. Wundt, who is widely characterized as the founder of psychology, viewed psychology as the scientific study of consciousness. The new discipline grew rapidly in North America in the late 19th century, as illustrated by G. Stanley Hall's career. Hall established America's first research lab in psychology and founded the American Psychological Association.
- 1.2** The structuralists, led by Edward Titchener, believed that psychology should use introspection to analyze consciousness into its basic elements. The functionalists, inspired by the ideas of William James, believed that psychology should focus on the purpose and adaptive functions of consciousness. Functionalism paved the way for behaviorism and applied psychology and had more of a lasting impact than structuralism.
- 1.3** Sigmund Freud was an Austrian physician who invented psychoanalysis. His psychoanalytic theory emphasized the unconscious determinants of behavior and the importance of sexuality. Freud's ideas were controversial, and they met with resistance in academic psychology. However, as more

psychologists developed an interest in personality, motivation, and abnormal behavior, psychoanalytic concepts were incorporated into mainstream psychology.

- 1.4** Behaviorists, led by John B. Watson, argued that psychology should study only observable behavior. Thus, they campaigned to redefine psychology as the science of behavior. Emphasizing the importance of the environment over heredity, the behaviorists began to explore stimulus-response relationships, often using laboratory animals as subjects.

- 1.5** Working with laboratory rats and pigeons, American behaviorist B. F. Skinner demonstrated that organisms tend to repeat responses that lead to positive consequences and not to repeat responses that lead to neutral or negative consequences. Based on the belief that all behavior is fully governed by external stimuli, Skinner argued that free will is an illusion. Finding both behaviorism and psychoanalysis unsatisfactory, advocates of a new theoretical orientation called humanism became influential in the 1950s. Humanism, led by Abraham Maslow and Carl Rogers, emphasized the unique qualities of human behavior and humans' freedom and potential for personal growth.

Psychology's Modern History

The principal storyline of psychology's early history was its gradual maturation into a research-based science. The seminal work of Wundt, Hall, James, Watson, Skinner, and a host of other pioneers served to establish psychology as a respected scientific discipline in the halls of academia. As you will learn momentarily, the principal storyline of psychology's modern history has been its remarkable growth into a multifaceted scientific and professional enterprise. In more recent decades psychology's story has been marked by expanding boundaries and broader interests.

Psychology Comes of Age as a Profession



As you probably know, psychology is not all pure science. It has a highly practical side. Many psychologists provide a variety of professional services to the public. Their work falls within the domain of **applied psychology, the branch of psychology concerned with everyday, practical problems.** This branch of psychology, so prominent today, was actually slow to develop. A small number of early psychologists dabbled in various areas of applied psychology. However, it remained on the fringes of mainstream psychology until World War II (Benjamin et al., 2003). Not until the 1950s did psychology really start to come of age as a profession.

The first applied arm of psychology to achieve any prominence was *clinical psychology*. As practiced today, **clinical psychology is the branch of psychology concerned with the diagnosis and treatment of psychological problems and disorders.** In the early days, however, the emphasis was almost exclusively on psychological testing and adjustment problems in schoolchildren. Although the first psychological clinic was established as early as 1896, by 1937 only about one in five members of the American Psychological Association reported an interest in clinical psychology (Goldenberg, 1983). Clinicians were a small minority in a field devoted primarily to research.

That picture was about to change with dramatic swiftness. During World War II (1939–1945), many academic psychologists were pressed into service as clinicians. They were needed to screen military recruits and to treat soldiers suffering from trauma. Many of these psychologists (often to their surprise)

found the clinical work to be challenging and rewarding, and a substantial portion continued to do clinical work after the war. More significant, some 40,000 American veterans returned to seek postwar treatment in Veterans Administration (VA) hospitals for their psychological scars. With the demand for clinicians far greater than the supply, the VA stepped in to finance many new training programs in clinical psychology. These programs, emphasizing training in the treatment of psychological disorders as well as psychological testing, proved attractive. Within a few years, about half the new Ph.D.'s in psychology were specializing in clinical psychology. Most went on to offer professional services to the public (Goldenberg, 1983). Assessing the impact of World War II, Routh and Reisman (2003) characterize it as “a watershed in the history of clinical psychology. In its aftermath, clinical psychology received something it had not received before: enormous institutional support” (p. 345). Thus, during the 1940s and 1950s the prewar orphan of applied/professional psychology started to mature into a robust, powerful adult.

In the academic world, many traditional research psychologists were alarmed by the professionalization of the field. They argued that the energy and resources previously devoted to research would be diluted. Because of conflicting priorities, tensions between the research and professional arms of psychology continued to grow. The American Psychological Association has worked diligently to represent both the scientific and professional branches of psychology. However, many researchers complained that the APA had come to be dominated by clinicians. In 1988 this rift stimulated some research psychologists to form a new organization, now called the Association for Psychological Science (APS). APS serves exclusively as an advocate for the science of psychology.

Despite the conflicts, the professionalization of psychology has continued at a steady pace. In fact, the trend has spread into additional areas of psychology. Today the broad umbrella of applied psychology covers a variety of professional specialties, including school psychology, industrial/organizational psychology, counseling psychology, and emerging new areas, such as forensic psychology (Benjamin & Baker, 2004). Whereas psychologists were once almost exclusively academics, the vast majority of today's psychologists devote some of their time to providing professional services.

KEY LEARNING GOALS

- 1.6** Discuss how historical events contributed to the emergence of psychology as a profession.
- 1.7** Describe two trends emerging in the 1950s–1960s that represented a return to psychology's intellectual roots.
- 1.8** Explain why Western psychology has shown an increased interest in cultural variables in recent decades.
- 1.9** Discuss the emergence and basic ideas of evolutionary psychology.
- 1.10** Explain the development and principal tenets of the positive psychology movement.

Reality CHECK

Misconception

Psychologists have always been involved in the treatment of mental illness.

Reality

In the first six decades of its existence as an independent discipline, psychology had virtually no role in the diagnosis and treatment of mental illness, which was thoroughly dominated by psychiatry. Psychologists were mostly academics and researchers. It was only during World War II and its aftermath that psychology was drawn into the field of mental health.

Psychology Returns to Its Roots: Renewed Interest in Cognition and Physiology



While applied psychology started to blossom in the 1950s, research in psychology continued to evolve. Ironically, two trends that emerged in the 1950s and picked up momentum in 1960s represented a return to psychology's roots in the 19th century, when psychologists were principally interested in consciousness and physiology. Since the 1950s and 1960s, psychologists have shown a renewed interest in consciousness (now called "cognition") and the physiological bases of behavior.

Cognition refers to the mental processes involved in acquiring knowledge. In other words, cognition involves thinking or conscious experience. For many decades, the dominance of behaviorism discouraged the investigation of "unobservable" mental processes (Mandler, 2002). During the 1950s and 1960s, however, research on cognition slowly began to emerge (Miller, 2003). The research of Swiss psychologist Jean Piaget (1954) focused increased attention on the study of children's cogni-

tive development, while the work of Noam Chomsky (1957) elicited new interest in the psychological underpinnings of language. Around the same time, Herbert Simon and his colleagues (Newell, Shaw, & Simon, 1958) began influential, groundbreaking research on problem solving that eventually led to a Nobel prize for Simon (in 1978). These advances sparked a surge of interest in cognitive processes.

Since then, cognitive theorists have argued that psychology must include the study of internal mental events to fully understand behavior (Gardner, 1985; Neisser, 1967). Advocates of the *cognitive perspective* point out that the ways people think about events surely influence how they behave. Consequently, focusing exclusively on overt behavior yields an incomplete picture of why individuals behave as they do. Equally important, psychologists investigating decision making, reasoning, and problem solving have shown that methods *can* be devised to study cognitive processes scientifically. The methods are different from those used in psychology's early days. Yet, modern research on the inner workings of the mind has put the *psyche* back in psychology. In fact, many observers maintain that the cognitive perspective has become the dominant one in contemporary psychology. Some interesting data support this assertion, as shown in **Figure 1.4**, which plots estimates of the research productivity of four theoretical perspectives since 1950. As you can see, since 1975 the cognitive perspective has generated more published articles than any other (Spear, 2007).

The 1950s and 1960s also saw many important discoveries that highlighted the interrelations among mind, body, and behavior (Thompson & Zola, 2003). For example, James Olds (1956) showed that electrical stimulation of the brain could evoke emotional responses such as pleasure and rage in animals. Other work, which eventually earned a Nobel prize for Roger Sperry (in 1981), showed that the right and left halves of the brain are specialized to handle different types of mental tasks (Gazzaniga, Bogen, & Sperry, 1965). The 1960s also brought the publication of David Hubel and Torsten Wiesel's (1962, 1963) Nobel prize-winning work on how visual signals are processed in the brain.

These and many other findings stimulated an increase in research on the biological, and especially the neurobiological, bases of behavior. Advocates of the *biological or neuroscience perspective* maintain that much of human and animal behavior can be explained in terms of the brain structures and biochemical processes that allow organisms to behave. As you can see in **Figure 1.4**, the prominence of the

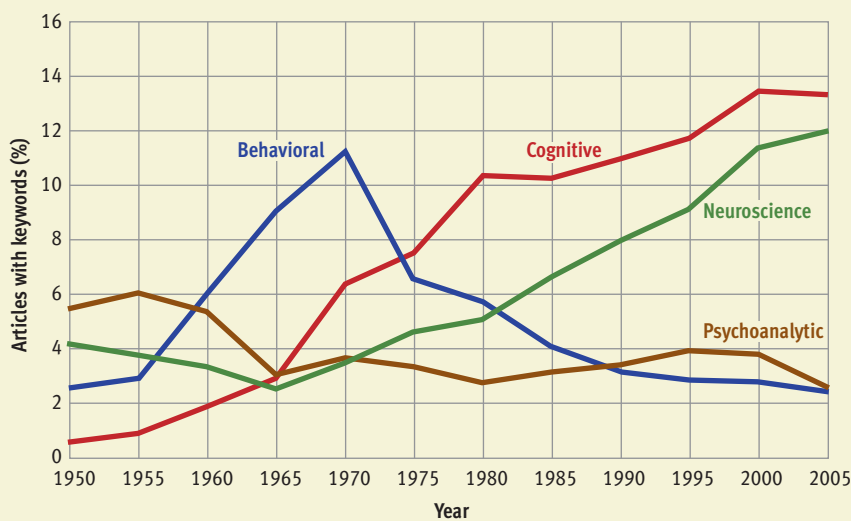


Figure 1.4

The relative prominence of four major schools of thought in psychology. To estimate the relative productivity and influence of various theoretical orientations in recent decades, Joseph Spear (2007) conducted a keyword search of the psychological research literature indexed in PsycINFO to estimate the percentage of articles relevant to each school of thought. Obviously, his approach is just one of many ways one might gauge the prominence of various theoretical orientations in psychology. Nonetheless, the data are thought provoking. His findings suggest that the cognitive perspective surpassed the behavioral perspective in its influence on research sometime around 1975 and that it has continued as the leading perspective since then. As you can see, his data also demonstrate that the neuroscience perspective has grown steadily in influence since the 1950s.

SOURCE: Adapted from Spear, J. H. (2007). Prominent schools or other active specialties? A fresh look at some trends in psychology. *Review of General Psychology*, 11, 363–380. Copyright © 2007 by the American Psychological Association.

neuroscience perspective has grown steadily since the 1950s (Spear, 2007). In the 19th century the young science of psychology had a heavy physiological emphasis. Thus, increased interest in the biological bases of behavior represents another return to psychology's heritage. The cognitive and neuroscience perspectives are compared with other contemporary theoretical perspectives in **Table 1.2**.

Psychology Broadens Its Horizons: Increased Interest in Cultural Diversity



Throughout psychology's history, most researchers have worked under the assumption that they were seeking to identify general principles of behavior that would be applicable to all of humanity (Smith, Spillane, & Annus, 2006). In reality, however, psychology has largely been a Western (North American and European) enterprise (Gergen et al. 1996; Norenzayan & Heine, 2005). The vast majority of research has been conducted in the United States by middle- and upper-class white psychologists who have used mostly middle- and upper-class white males as participants (Hall, 1997; Norenzayan & Heine, 2005). Traditionally, Western psychologists have paid scant attention to how well their theories and research might apply to non-Western cultures, to ethnic minorities in Western societies, or even to women as opposed to men.

In recent decades, though, Western psychologists have begun to recognize that their neglect of cultural variables has diminished the value of their work. They are now devoting increased attention to culture as a determinant of behavior. What brought about this shift? The new interest in culture appears mainly attributable to two recent trends: (1) advances in communication, travel, and international trade have “shrunk” the world and increased global interdependence, bringing more and more Americans and Europeans into contact with

people from non-Western cultures; and (2) the ethnic makeup of the Western world has become an increasingly diverse multicultural mosaic (Brislin, 2000; Hermans & Kempen, 1998; Mays et al., 1996).

These trends have prompted more and more Western psychologists to broaden their horizons and incorporate cultural factors into their theories and research (Lonner, 2009; Markus & Hamedani, 2007; Matsumoto & Yoo, 2006). These psychologists are striving to study previously underrepresented groups of subjects to test the generality of earlier findings and to catalog both the differences and similarities among cultural groups. They are working to increase knowledge of how culture is transmitted through socialization practices and how culture colors one's view of the world. They are seeking to learn how people cope with cultural change and to find ways to reduce misunderstandings and conflicts in intercultural interactions. In addition, they are trying to enhance understanding of how cultural groups are affected by prejudice, discrimination, and racism. In all these efforts, they are striving to understand the unique experiences of culturally diverse people *from the point of view of those people*. These efforts to ask new questions, study new groups, and apply new perspectives promise to enrich the discipline of psychology (Fowers & Davidov, 2006; Lehman, Chiu, & Schaller, 2004; Matsumoto, 2003; Sue, 2003).

Psychology Adapts: The Emergence of Evolutionary Psychology



Another relatively recent development in psychology has been the emergence of *evolutionary psychology* as an influential theoretical perspective. Evolutionary psychologists assert that the patterns of behavior seen in a species are products of evolution in the same way that anatomical characteristics are. ***Evolutionary psychology examines behavioral processes in terms of their adaptive value for members of a***

species over the course of many generations. The basic premise of evolutionary psychology is that natural selection favors behaviors that enhance organisms' reproductive success—that is, passing on genes to the next generation. Thus, if a species is highly aggressive,



evolutionary psychologists argue that it's because aggressiveness conveys a survival or reproductive advantage for members of that species, so genes that promote aggressiveness are more likely to be passed on to the next generation. Evolutionary psychologists have a natural interest in animal behavior. However, they have not been bashful about analyzing the evolutionary bases of human behavior. As La Cerra and Kurzban (1995) put it, "The human mind was sculpted by natural selection, and it is this evolved organ that constitutes the subject matter of psychology" (p. 63).

Looking at behavioral patterns in terms of their evolutionary significance is not an entirely new idea (Graziano, 1995). As noted earlier, William James and other functionalists were influenced by Darwin's concept of natural selection over a century ago. Until the 1990s, however, applications of evolutionary concepts to *psychological* processes were piecemeal, halfhearted, and not particularly well received. The 1960s and 1970s brought major breakthroughs in the field of evolutionary *biology* (Hamilton, 1964; Trivers, 1971, 1972; Williams, 1966). These advances, however, had little immediate impact in psychology. The situation began to change in the 1980s. A growing cadre of evolutionary psychologists, led by David Buss (1985, 1988, 1989), Martin Daly and Margo Wilson (1985, 1988), and Leda Cosmides and John Tooby (Cosmides & Tooby, 1989; Tooby & Cosmides, 1989), published widely cited studies on a broad range of topics.



The praying mantis has an astonishing ability to blend in with its environment, along with remarkably acute hearing and vision that permit it to detect prey up to 60 feet away and powerful jaws that allow it to devour its prey. They are so deadly they will eat each other, which makes sex quite a challenge, but males have evolved a reflex module that allows them to copulate successfully while being eaten (even after decapitation)! These physical characteristics obviously represent adaptations that have been crafted by natural selection over the course of millions of generations. Evolutionary psychologists maintain that many patterns of behavior seen in various species are also adaptations that have been shaped by natural selection.

These subjects included mating preferences, jealousy, aggression, sexual behavior, language, decision making, personality, and development. By the mid-1990s, it became clear that psychology was witnessing the birth of its first major, new theoretical perspective since the cognitive revolution in the 1950s and 1960s.

As with all prominent theoretical perspectives in psychology, evolutionary theory has its critics (Buller, 2009; Lickliter & Honeycutt, 2003; Plotkin, 2004; Richardson, 2007; Rose & Rose, 2000). They argue that many evolutionary hypotheses are untestable and that evolutionary explanations are post hoc, speculative accounts for obvious behavioral phenomena (see the Critical Thinking Application for this chapter). However, evolutionary psychologists have articulated persuasive rebuttals to these and other criticisms (Buss & Reeve, 2003; Confer et al., 2010; Conway & Schaller, 2002; Hagen, 2005). Thus, the evolutionary perspective has become increasingly influential.

Psychology Moves in a Positive Direction



Shortly after Martin Seligman was elected president of the American Psychological Association in 1997, he experienced a profound insight that he characterized as an "epiphany." This pivotal insight came from an unusual source—Seligman's 5-year-old daughter, Nikki. She scolded her overachieving, task-oriented father for being "grumpy" far too much of the time. Provoked by his daughter's criticism, Seligman suddenly realized that his approach to life was overly and unnecessarily negative. More important, he recognized that the same assessment could be made of the field of psychology—that, it too, was excessively and needlessly negative in its approach (Seligman, 2003). This revelation inspired Seligman to launch a new initiative within psychology that came to be known as the *positive psychology movement*.

Seligman went on to argue convincingly that the field of psychology had historically devoted too much attention to pathology, weakness, damage, and ways to heal suffering. He acknowledged that this approach had yielded valuable insights and progress. But he argued that it also resulted in an unfortunate neglect of the forces that make life worth living. Seligman convened a series of informal meetings with influential psychologists and then more formal conferences to gradually outline the philosophy and goals of positive psychology.

Other major architects of the positive psychology movement have included Mihaly Csikszentmihalyi (2000), Christopher Peterson (2000, 2006), and Barbara Fredrickson (2002, 2005). Like humanism before it, positive psychology seeks to shift the field's focus away from negative experiences. As Seligman and Csikszentmihalyi (2000) put it, "The aim of positive psychology is to begin to catalyze a change in the focus of psychology from preoccupation with only repairing the worst things in life to also building positive qualities" (p. 5). Thus, **positive psychology uses theory and research to better understand the positive, adaptive, creative, and fulfilling aspects of human existence.**

The emerging field of positive psychology has three areas of interest (Seligman, 2003). The first is the study of *positive subjective experiences*, or positive emotions, such as happiness, love, gratitude, contentment, and hope. The second focus is on *positive individual traits*—that is, personal strengths and virtues. Theorists are working to identify, classify, and analyze the origins of such positive traits as courage, perseverance, nurturance, tolerance, creativity, integrity, and kindness. The third area of interest is in *positive institutions and communities*. Here the focus is on how societies can foster civil discourse, strong families, healthful work environments, and supportive neighborhood communities.

Although it has proven far less controversial than evolutionary psychology, positive psychology has its critics (La Torre, 2007; Richardson & Guignon, 2008; Sugarman, 2007). For example, Richard Lazarus (2003) has argued that dividing human experience into positive and negative domains is an oversimplification and that the line between them is not as clear and obvious as most have assumed. Lazarus expresses concern that positive psychology may be little more than "one of the many fads that come and go in our field" (p. 93). Only time will tell, as positive psychology is still in its infancy. It will be fascinating to see whether and how this new movement reshapes psychology's research priorities and theoretical interests in the years to come.

Our review of psychology's past has shown the field's evolution (an Illustrated Overview of the highlights of psychology's history can be found on pages 18–19). We have seen psychology develop from philosophical speculation into a rigorous science committed to research. We have seen how a highly visible professional arm involved in mental health services emerged from this science. We have seen how psychology's focus on physiology is rooted in its 19th-century origins. We have seen how and

why psychologists began conducting research on lower animals. We have seen how psychology has evolved from the study of mind and body to the study of behavior. And we have seen how the investigation of mind and body has been welcomed back into the mainstream of modern psychology. We have seen how various theoretical schools have defined the scope and mission of psychology in different ways. We have seen how psychology's boundaries have expanded and how its interests have become increasingly diverse. Above all else, we have seen that psychology is a growing, evolving intellectual enterprise.

Psychology's history is already rich, but its story has barely begun. The century or so that has elapsed since Wilhelm Wundt put psychology on a scientific footing is only an eyeblink of time in human history. What has been discovered during those years, and what remains unknown, is the subject of the rest of this book.

REVIEW OF KEY LEARNING GOALS

1.6 Stimulated by the demands of World War II, clinical psychology grew rapidly in the 1950s. Thus, psychology became a profession as well as a science. This movement toward professionalization eventually spread to other areas in psychology, such as counseling psychology, industrial/organizational psychology, and school psychology.

1.7 During the 1950s and 1960s advances in the study of cognition led to renewed interest in mental processes, as psychology returned to its roots. Advocates of the cognitive perspective argue that human behavior cannot be fully understood without considering how people think. The 1950s and 1960s also saw advances in research on the biological bases of behavior. Advocates of the neuroscience perspective assert that human and animal behavior can be explained in terms of the brain structures and biochemical processes that allow organisms to behave.

1.8 In the 1980s, Western psychologists, who had previously been rather provincial, developed a greater interest in how cultural factors influence behavior. This trend was sparked in large part by growing global interdependence and by increased cultural diversity in Western societies.

1.9 The 1990s witnessed the emergence of a new theoretical perspective called evolutionary psychology. The central premise of this new school of thought is that the patterns of behavior seen in a species are products of evolution in the same way that anatomical characteristics are and that the human mind has been sculpted by natural selection.

1.10 Around the beginning of the 21st century, the positive psychology movement became an influential force. Advocates of positive psychology argue that the field has historically devoted too much attention to pathology, weakness, and ways to heal suffering. Positive psychology seeks to better understand the adaptive, creative, and fulfilling aspects of human existence.

Illustrated Overview of Psychology's History

1870

1880

1890

1900

1910

1920

1930

1875



First demonstration laboratories are set up independently by **William James** (at Harvard) and **Wilhelm Wundt** (at the University of Leipzig).

1888

Sir Francis Galton develops the concept of correlation which will allow generations of scientists to quantify associations between variables.



1905

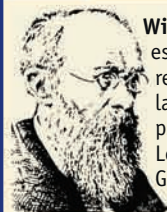
Alfred Binet develops first successful intelligence test in France.

1914–1918



Widespread intelligence testing is begun by military during World War I.

1879



Wilhelm Wundt establishes first research laboratory in psychology at Leipzig, Germany.



1908



Margaret Washburn publishes *The Animal Mind*, which serves as an impetus for behaviorism.



1916

Lewis Terman publishes Stanford-Binet Intelligence Scale, which becomes the world's foremost intelligence test.

1920s

Gestalt psychology nears its peak influence.

1933

Sigmund Freud's influence continues to build as he publishes *New Introductory Lectures on Psychoanalysis*.



1881

Wilhelm Wundt establishes first journal devoted to research in psychology.



1909

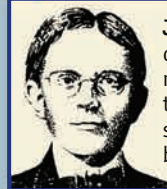


Sigmund Freud's increasing influence receives formal recognition as G. S. Hall invites Freud to give lectures at Clark University.

1890

William James publishes his seminal work, *The Principles of Psychology*.

1913



John B. Watson writes classic behaviorism manifesto, arguing that psychology should study only observable behavior.

1936

Hans Selye launches the study of psychological stress.

1883

G. Stanley Hall establishes America's first research laboratory in psychology at Johns Hopkins University.

1892

G. Stanley Hall founds American Psychological Association.

1904

Ivan Pavlov shows how conditioned responses are created, paving the way for stimulus-response psychology.



1914



Leta Hollingworth publishes pioneering work on the psychology of women.

SOURCES: Wright brothers/Kitty Hawk: © Stock Montage, Inc.; administering intelligence text: © Bettmann Corbis; man on phone: Antman Archives/The Image Works; Washburn: Archives of the History of American Psychology, University of Akron, Akron, Ohio; Edison's lamp: Adapted from *The Scientific American*, New York, 10 January 1880; 1909: Clark University; Courtesy of Clark University Archives; Hollingworth: Archives of the History of American Psychology, University of Akron, Akron, Ohio; Pavlov and dog: © Bettmann Corbis; Kahneman: Courtesy of Daniel Kahneman; atomic bomb: Photo12/The Image Works; shuttle liftoff: NASA; Loftus: Courtesy of Elizabeth Loftus; Clark: © Bettmann Corbis; Maccoby: © Chuck Painter/Stanford News Service; Seligman: Courtesy of Martin E. P. Seligman; Erikson: © AP Images; Vietnam soldiers: © AP/Imagery; All other images: © Cengage Learning 2013

1940

1941–1945

Rapid growth in clinical psychology begins in response to huge demand for clinical services created by World War II and its aftermath.



1950

1953

B. F. Skinner publishes his influential *Science and Human Behavior*, advocating radical behaviorism similar to Watson's.



1980

1980s

Increased global interdependence and cultural diversity in Western societies spark surge of interest in how cultural factors mold behavior.

1990

Early 1990s

Evolutionary psychology emerges as a major new theoretical perspective.



1990s

1981

Roger Sperry wins Nobel prize (in physiology and medicine) for split-brain studies.

1954

Abraham Maslow's *Motivation and Personality* helps fuel humanistic movement.

1956

The cognitive revolution is launched at watershed conference where Herbert Simon, George Miller, and Noam Chomsky report three major advances in just one day.



The repressed memories controversy stimulates influential research by **Elizabeth Loftus** and others on the malleability and fallibility of human memory.

1947



Kenneth and Mamie **Clark** publish work on prejudice that is cited in landmark 1954 Supreme Court decision outlawing segregation.

1963

Stanley Milgram conducts controversial study of obedience to authority, which may be the most famous single study in psychology's history.



1974

Eleanor Maccoby and Carol Jacklin publish their landmark review of research on gender differences, which galvanizes research in this area.



Late 1990s



Martin Seligman launches the positive psychology movement.

1950

Erik Erikson writes *Childhood and Society* in which he extends Freud's theory of development across the life span.



1971

B. F. Skinner creates furor over radical behaviorism with his controversial book *Beyond Freedom and Dignity*.



2000

Eric Kandel wins Nobel Prize (in physiology and medicine) for his research on the biochemistry of memory.

Early 1950s

John Bowlby begins influential research on the nature of the attachment bond between mothers and infants.

1958

Joseph Wolpe launches behavior therapy with his description of systematic desensitization treatment for phobias.

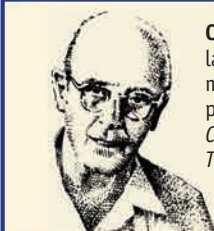
1978

Herbert Simon wins Nobel prize (in economics) for research on cognition.

1988

Research psychologists form American Psychological Society (APS) to serve as an advocate for the science of psychology.

1951



Carl Rogers helps launch humanistic movement with publication of *Client-Centered Therapy*.

1963

Albert Bandura publishes landmark research on media violence and aggression as his social learning theory adds a cognitive slant to behaviorism.

1961–1964

Roger Sperry's split-brain research and work by David Hubel and Torsten Wiesel on how cortical cells respond to light help rejuvenate the biological perspective in psychology.

2002



Daniel Kahneman wins Nobel Prize (in economics) for his research on decision making.

KEY LEARNING GOALS

1.11 Discuss the growth of psychology, and identify the most common work settings for contemporary psychologists.

1.12 List and describe nine major research areas in psychology.

1.13 List and describe six professional specialties in psychology, and distinguish between clinical psychology and psychiatry.

Reality CHECK

Misconception

Psychology is the study of the mind.

Reality

When the term was coined in the 16th century, *psychology* did refer to the study of the mind, but the term's original meaning is much too narrow today. Since the 19th century, scientific psychology has focused heavily on physiological processes, and the 20th century brought a new focus on overt behavior. Modern psychology encompasses the study of behavior and the mental and physiological processes that regulate behavior.

Psychology Today: Vigorous and Diversified

We began this chapter with an informal description of what psychology is about. Now that you have a feel for how psychology has developed, you can better appreciate a definition that does justice to the field's modern diversity: **Psychology is the science that studies behavior and the physiological and cognitive processes that underlie it, and it is the profession that applies the accumulated knowledge of this science to practical problems.**

Contemporary psychology is a thriving science and profession. Its growth has been remarkable. One simple index of this growth is the dramatic rise in membership in the American Psychological Association. **Figure 1.5** shows that APA membership has increased ninefold since 1950. In the United States, psychology is the second most popular undergraduate major. The field accounts for almost 10% of all doctoral degrees awarded in the sciences and humanities. The comparable figure in 1945 was only 4% (Howard et al., 1986). Of course, psychology is an international enterprise. Today, over 2100 technical

journals from all over the world publish research articles on psychology. Thus, by any standard of measurement—the number of people involved, the number of degrees granted, the number of journals published—psychology is a healthy, growing field.

Psychology's vigorous presence in modern society is also demonstrated by the great variety of settings in which psychologists work. They were once found almost exclusively in academia. Today, however, colleges and universities are the primary work setting for fewer than 30% of American psychologists. The remaining 70% work in hospitals, clinics, police departments, research institutes, government agencies, business and industry, schools, nursing homes, counseling centers, and private practice. **Figure 1.6** shows the distribution of psychologists employed in various categories of settings.

Clearly, contemporary psychology is a multifaceted field. This is especially apparent when we consider the many areas of specialization in both the science and the profession of psychology.

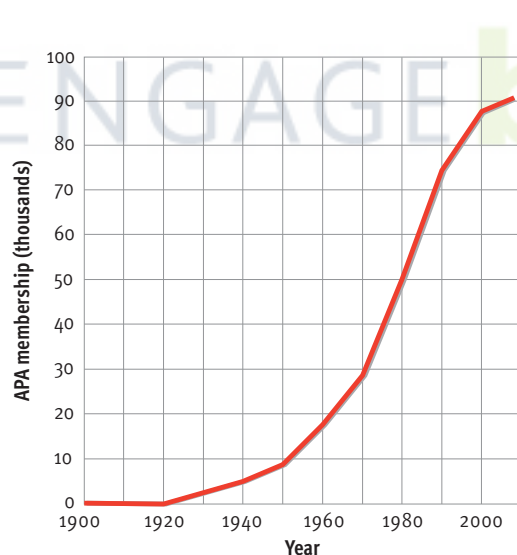


Figure 1.5
Membership in the American Psychological Association, 1900–2007. The steep rise in the number of psychologists in the APA since 1950 testifies to psychology's remarkable growth as a science and a profession. If graduate student members are also counted, the APA has about 150,000 members. (Based on data published by the American Psychological Association)

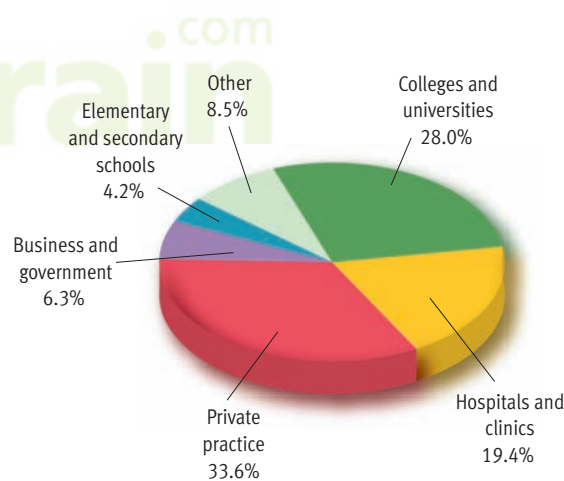


Figure 1.6
Employment of psychologists by setting. The work settings in which psychologists are employed have become quite diverse. Survey data on the primary employment setting of APA members indicates that one-third are in private practice (compared to 12% in 1976), while only 28% work in colleges and universities (compared to 47% in 1976). These data may slightly underestimate the percentage of psychologists in academia, given the competition between APA and APS to represent research psychologists. (Based on data published by the American Psychological Association)

Research Areas in Psychology

Most psychologists receive broad training that provides them with knowledge about many areas of psychology. However, they usually specialize when it comes to doing research. Such specialization is necessary because the subject matter of psychology has become so vast over the years. Today it is virtually impossible for anyone to stay abreast of the new research in all specialties. Specialization is also necessary because specific skills and training are required to do research in some areas.

The nine major research areas in modern psychology are (1) developmental psychology, (2) social psychology, (3) experimental psychology, (4) physiological psychology, (5) cognitive psychology, (6) personality, (7) psychometrics, (8) educational psychology, and (9) health psychology. **Figure 1.7** describes these areas briefly and shows the percentage of research psychologists in the APA who identify each area as their primary interest. As you can see, social psychology and developmental psychology have become especially active areas of research.

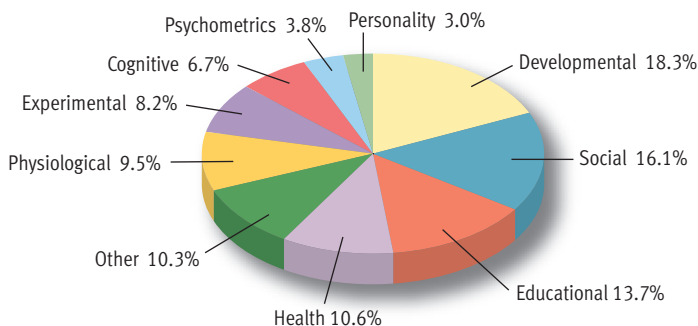


Figure 1.7
Major research areas in contemporary psychology. Most research psychologists specialize in one of the nine broad areas described here. The figures in the pie chart reflect the percentage of academic and research psychologists belonging to the APA who identify each area as their primary interest. (Based on data published by the American Psychological Association)

Area	Focus of research
Developmental psychology	Looks at human development across the life span. Developmental psychology once focused primarily on child development, but today devotes a great deal of research to adolescence, adulthood, and old age.
Social psychology	Focuses on interpersonal behavior and the role of social forces in governing behavior. Typical topics include attitude formation, attitude change, prejudice, conformity, attraction, aggression, intimate relationships, and behavior in groups.
Educational psychology	Studies how people learn and the best ways to teach them. Examines curriculum design, teacher training, achievement testing, student motivation, classroom diversity, and other aspects of the educational process.
Health psychology	Focuses on how psychological factors relate to the promotion and maintenance of physical health and the causation, prevention, and treatment of illness.
Physiological psychology	Examines the influence of genetic factors on behavior and the role of the brain, nervous system, endocrine system, and bodily chemicals in the regulation of behavior.
Experimental psychology	Encompasses the traditional core of topics that psychology focused on heavily in its first half-century as a science: sensation, perception, learning, conditioning, motivation, and emotion. The name experimental psychology is somewhat misleading, as this is not the only area in which experiments are done. Psychologists working in all the areas listed here conduct experiments.
Cognitive psychology	Focuses on “higher” mental processes, such as memory, reasoning, information processing, language, problem solving, decision making, and creativity.
Psychometrics	Is concerned with the measurement of behavior and capacities, usually through the development of psychological tests. Psychometrics is involved with the design of tests to assess personality, intelligence, and a wide range of abilities. It is also concerned with the development of new techniques for statistical analysis.
Personality	Is interested in describing and understanding individuals’ consistency in behavior, which represents their personality. This area of interest is also concerned with the factors that shape personality and with personality assessment.

© Cengage Learning 2013

Reality CHECK

Misconception

Psychology and psychiatry are largely the same.

Reality

Psychiatry is a branch of medicine that has always focused almost exclusively on the treatment of mental disorders. Psychology is an academic field that is vastly broader in scope, focusing on learning, perception, human development, memory, intelligence, and social behavior, although it does have a clinical arm concerned with mental disorders. Psychologists and psychiatrists get very different kinds of training, earn different degrees, and tend to have different approaches to the treatment of mental illness (see Chapter 16).

Professional Specialties in Psychology

Applied psychology consists of four well-established areas of specialization and a couple of new, emerging specialties. The four established professional specialties are (1) clinical psychology, (2) counseling psychology, (3) school psychology, and (4) industrial/organizational psychology. The two emerging specialties are clinical neuropsychology and forensic psychology. Descriptions of all six of these specialties can be found in **Figure 1.8**, along with the percentage of professional psychologists in the APA who cite each area as their chief interest. As the graphic indicates, clinical psychology is the most prominent and widely practiced professional specialty in the field.

The data in **Figures 1.7** and **1.8** are based on APA members' reports of their single, principal area of specialization. However, many psychologists work on both research and application. Some academic psychologists work as consultants, therapists, and counselors on a part-time basis. Similarly, some applied psychologists conduct basic research on issues related to their specialty. For example, many clinical psychologists are involved in research on the nature and causes of abnormal behavior.

Some people are confused about the difference between clinical psychology and psychiatry. The confusion is understandable, as both clinical psychologists and psychiatrists are involved in analyzing and treating psychological disorders. Although some overlap exists between the two professions, the training and educational requirements for the two are quite different. Clinical psychologists go to graduate

school to earn one of several doctoral degrees (Ph.D., Ed.D., or Psy.D.) in order to enjoy full status in their profession. Psychiatrists go to medical school for their postgraduate education, where they receive general training in medicine and earn an M.D. degree. They then specialize by completing residency training in psychiatry at a hospital. Clinical psychologists and psychiatrists also differ in the way they tend to approach the treatment of mental disorders, as we will see in Chapter 16. To summarize, **psychiatry is a branch of medicine concerned with the diagnosis and treatment of psychological problems and disorders**. In contrast, clinical psychology takes a non-medical approach to such problems.

REVIEW OF KEY LEARNING GOALS

1.11 Contemporary psychology is a diversified science and profession that has grown rapidly in recent decades, as evidenced by the fact that APA membership has grown ninefold since 1950. The main work settings for contemporary psychologists are (1) private practice, (2) colleges and universities, (3) hospitals and clinics, and (4) business and government.

1.12 Major areas of research in modern psychology include developmental psychology, social psychology, experimental psychology, physiological psychology, cognitive psychology, personality, psychometrics, educational psychology, and health psychology.

1.13 Applied psychology encompasses six professional specialties: clinical psychology, counseling psychology, school psychology, industrial/organizational psychology, clinical neuropsychology, and forensic psychology. Although clinical psychology and psychiatry share some of the same interests, they are different professions with different types of training. Psychiatrists are physicians who specialize in the diagnosis and treatment of mental disorders, whereas clinical psychologists take a nonmedical approach to psychological problems.

KEY LEARNING GOALS

1.14 Clarify the text's three unifying themes relating to psychology as a field of study.

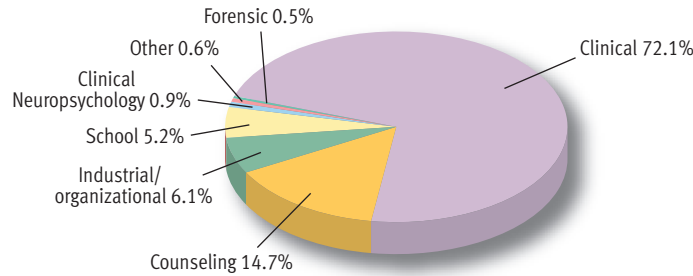
1.15 Clarify the text's four unifying themes relating to psychology's subject matter.

Seven Unifying Themes

The enormous breadth and diversity of psychology make it a challenging subject for the beginning student. In the pages ahead you will be introduced to many areas of research and a multitude of ideas, concepts, and principles. Fortunately, ideas are not all created equal. Some are far more important than others. In this section, I will highlight seven fundamental themes that will reappear in a number of variations as we move from one area of psychology to another in this text. You have already met some of these key ideas in our review of psychology's past and present. Now we will isolate them and highlight

their significance. In the remainder of the book these ideas serve as organizing themes to provide threads of continuity across chapters. They will also help you see the connections among the various areas of research in psychology.

In studying psychology, you are learning about both behavior and the scientific discipline that investigates it. Accordingly, our seven themes come in two sets. The first set consists of statements highlighting crucial aspects of psychology as a way of thinking and as a field of study. The second set consists of broad generalizations about psychology's



Specialty	Focus of professional practice
Clinical psychology	Clinical psychologists are concerned with the evaluation, diagnosis, and treatment of individuals with psychological disorders, as well as treatment of less severe behavioral and emotional problems. Principal activities include interviewing clients, psychological testing, and providing group or individual psychotherapy.
Counseling psychology	Counseling psychology overlaps with clinical psychology in that specialists in both areas engage in similar activities—interviewing, testing, and providing therapy. However, counseling psychologists usually work with a somewhat different clientele, providing assistance to people struggling with everyday problems of moderate severity. Thus, they often specialize in family, marital, or career counseling.
Industrial and organizational psychology	Psychologists in this area perform a wide variety of tasks in the world of business and industry. These tasks include running human resources departments, working to improve staff morale and attitudes, striving to increase job satisfaction and productivity, examining organizational structures and procedures, and making recommendations for improvements.
School psychology	School psychologists strive to promote the cognitive, emotional, and social development of children in schools. They usually work in elementary or secondary schools, where they test and counsel children having difficulties in school and aid parents and teachers in solving school-related problems.
Clinical neuropsychology	Clinical neuropsychologists are involved in the assessment and treatment of people who suffer from central nervous system dysfunctions due to head trauma, dementia, stroke, seizure disorders, and so forth.
Forensic psychology	Forensic psychologists apply psychological principles to issues arising in the legal system, such as child custody decisions, hearings on competency to stand trial, violence risk assessments, involuntary commitment proceedings, and so forth.

© Cengage Learning 2013

Figure 1.8 **Principal professional specialties in contemporary psychology.** Most psychologists who deliver professional services to the public specialize in one of the six areas described here. The figures in the pie chart reflect the percentage of APA members delivering professional services who identify each area as their chief specialty. (Based on data published by the American Psychological Association)

subject matter: behavior and the cognitive and physiological processes that underlie it.

Themes Related to Psychology as a Field of Study

Looking at psychology as a field of study, we see three crucial ideas: (1) psychology is empirical, (2) psychology is theoretically diverse, and (3) psychology evolves in a sociohistorical context. Let's look at each of these ideas in more detail.

Theme 1: Psychology Is Empirical

Everyone tries to understand behavior. Most of us have our own personal answers to questions such as why some people are hard workers, why some are

overweight, and why others stay in demeaning relationships. If all of us are amateur psychologists, what makes scientific psychology different? The critical difference is that psychology is *empirical*. This aspect of psychology is fundamental, and virtually every page of this book reflects it.

What do we mean by empirical? **Empiricism is the premise that knowledge should be acquired through observation.** This premise is crucial to the scientific method that psychology embraced in the late 19th century. To say that psychology is empirical means that its conclusions are based on direct observation rather than on reasoning, speculation, traditional beliefs, or common sense. Psychologists are not content with having ideas that simply *sound* plausible. They conduct research to *test* their ideas.

Is intelligence higher, on average, in some social classes than in others? Are men more aggressive than women? Psychologists find a way to make direct, objective, and precise observations to answer such questions.

The empirical approach requires a certain attitude—a healthy brand of *skepticism*. Empiricism is a tough taskmaster. It demands data and documentation. Psychologists' commitment to empiricism means that they must learn to think critically about generalizations concerning behavior. If someone asserts that people tend to get depressed around Christmas, a psychologist is likely to ask, "How many people get depressed? In what population? In comparison to what baseline rate of depression? How is depression defined?" Their skeptical attitude means that psychologists are trained to ask, "Where's the evidence? How do you know?" If psychology's empirical orientation rubs off on you (and I hope it does), you will be asking similar questions by the time you finish this book.

Theme 2: Psychology Is Theoretically Diverse



Although psychology is based on observation, a string of unrelated observations would not be terribly enlightening. Psychologists do not set out to just collect isolated facts. They seek to explain and understand what they observe. To achieve these goals they must construct theories. **A theory is a system of interrelated ideas used to explain a set of observations.** In other words, a theory links apparently unrelated observations and tries to explain them. As an example, consider Sigmund Freud's observations about slips of the tongue, dreams, and psychological disturbances. On the surface, these observations appear unrelated. By devising the concept of the *unconscious*, Freud created a theory that links and explains these seemingly unrelated aspects of behavior.

Our review of psychology's past should have made one thing abundantly clear: Psychology is marked by theoretical diversity. Why do we have so many competing points of view? One reason is that no single theory can adequately explain everything that is known about behavior. Sometimes different theories focus on different aspects of behavior—that is, different collections of observations. Sometimes there is simply more than one way to look at something. Is the glass half empty or half full? Obviously, it



© Gregg Harris/Shutterstock

is both. To take an example from another science, physicists wrestled for years with the nature of light. Is it a wave, or is it a particle? In the end, scientists found it useful to think of light sometimes as a wave and sometimes as a particle. Similarly, if a business executive lashes out at her employees with stinging criticism, is she releasing pent-up aggressive urges (a psychoanalytic view)? Is she making a habitual response to the stimulus of incompetent work (a behavioral view)? Or is she scheming to motivate her employees by using "mind games" (a cognitive view)? In some cases, all three of these explanations might have some validity. In short, it is an oversimplification to expect that one view has to be right while all others are wrong. Life is rarely that simple.

Students are often troubled by psychology's many conflicting theories, which they view as a weakness. However, many psychologists argue that theoretical diversity is actually a strength (Hilgard, 1987). As we proceed through this text, you will see how differing theoretical perspectives often provide a more complete understanding of behavior than could be achieved by any one perspective alone.

Theme 3: Psychology Evolves in a Sociohistorical Context



Science is often seen as an "ivory tower" undertaking, isolated from the ebb and flow of everyday life. In reality, psychology and other sciences do not exist in a cultural vacuum. Dense interconnections exist between what happens in psychology and what happens in society at large (Altman, 1990; Danziger, 1990; Runyan, 2006). Trends, events, issues, and values in society influence psychology's evolution. Similarly, progress in psychology affects trends, events, issues, and values in society. To put it briefly, psychology develops in a *sociohistorical* (social and historical) context.

Our review of psychology's past is filled with examples of how social trends have left their imprint on psychology. In the late 19th century, psychology's rapid growth as a laboratory science was due, in part, to its fascination with physics as the model discipline. Thus, the spirit of the times fostered a scientific approach rather than a philosophical approach to the investigation of the mind. Similarly, Freud's groundbreaking ideas emerged out of a specific sociohistorical context. Cultural values in Freud's era encouraged the suppression of sexuality. As a result, people tended to feel guilty about their sexual urges to a much greater extent than is common today. This situation clearly contributed to Freud's emphasis on unconscious sexual conflicts.

For another example, consider the impact of World War II on the development of psychology as a profession. The rapid growth of professional psychology was largely attributable to the war-related surge in the demand for clinical services. Hence, World War II reshaped the landscape of psychology in a remarkably short time. Finally, in recent years we have seen how growing global interdependence and increased cultural diversity have prompted psychologists to focus new attention on cultural factors as determinants of behavior.

If we reverse our viewpoint, we can see that psychology has in turn left its mark on society. Consider, for instance, the pervasive role of mental testing in modern society. Your own career success may depend in part on how well you weave your way through a complex maze of intelligence and achievement tests made possible (to the regret of some) by research in psychology. As another example of psychology's impact on society, consider the influence that various theorists have had on parenting styles. Trends in childrearing practices have been shaped by the ideas of John B. Watson, Sigmund Freud, B. F. Skinner, and Carl Rogers—not to mention many more psychologists yet to be discussed. In short, society and psychology influence each other in complex ways. In the chapters to come, we will frequently have occasion to notice this dynamic relationship.

Themes Related to Psychology's Subject Matter

Looking at psychology's subject matter, we see four additional crucial ideas: (4) behavior is determined by multiple causes, (5) behavior is shaped by cultural heritage, (6) heredity and environment jointly influence behavior, and (7) people's experience of the world is highly subjective.

Theme 4: Behavior Is Determined by Multiple Causes



As psychology has matured, it has provided more and more information about the forces that govern behavior. This growing knowledge has led to a deeper appreciation of a simple but important fact: Behavior is exceedingly complex, and most aspects of behavior are determined by multiple causes.

The complexity of behavior may seem self-evident. People, however, usually think in terms of single causes. Thus, they offer explanations such as “Andrea flunked out of school because she is lazy.” Or they assert that “teenage pregnancies are increas-

ing because of all the sex in the media.” Single-cause explanations are sometimes accurate as far as they go, but they usually are incomplete. In general, psychologists find that behavior is governed by a complex network of interacting factors. This idea is referred to as the *multifactorial causation of behavior*.

As a simple illustration, consider the multiple factors that might influence your performance in your introductory psychology course. Relevant personal factors might include your overall intelligence, your reading ability, your memory skills, your motivation, and your study skills. In addition, your grade could be affected by numerous situational factors, including whether you like your psychology professor, whether you like your assigned text, whether the class meets at a good time for you, whether your work schedule is light or heavy, and whether you're having any personal problems.

As you proceed through this book, you will learn that complexity of causation is the rule rather than the exception. If we expect to understand behavior, we usually have to take into account multiple determinants.

Theme 5: Behavior Is Shaped by Cultural Heritage



Among the multiple determinants of human behavior, cultural factors are particularly prominent. Just as psychology evolves in a sociohistorical context, so, too, do individuals. People's cultural backgrounds exert considerable influence over their behavior. As Markus and Hamedani (2007) put it, “The option of being *asocial* or *acultural*—that is, living as a neutral being who is not bound to particular practices and socioculturally structured ways of behaving—is not available. People eat, sleep, work, and relate to one another in culture-specific ways” (p. 5). What is *culture*? Theorists have argued about the exact details of how to define culture for over a century. The precise boundaries of the concept remain a little fuzzy (Matsumoto & Yoo, 2006). Broadly speaking, ***culture refers to the widely shared customs, beliefs, values, norms, institutions, and other products of a community that are transmitted socially across generations.*** Culture is a far-reaching construct, encompassing everything from a society's legal system to its assumptions about family roles, from its dietary habits to its political ideals, from its technology to its attitudes about time, from its modes of dress to its spiritual beliefs, and from its art and music to its unspoken rules about sexual liaisons. We tend to think of culture as belonging to entire societies or broad ethnic



© Steve Raymer/Corbis

Cultural background has an enormous influence on people's behavior, shaping everything from modes of dress to sexual values and norms. Increased global interdependence brings more and more people into contact with cultures other than their own. This increased exposure to diverse cultures only serves to underscore the importance of cultural factors.

groups within societies—which it does—but the concept can also be applied to small groups (a tiny Aboriginal tribe in Australia, for example) and to nonethnic groups (gay culture, for instance).

Triandis (2007) emphasizes that culture has a dual nature, existing both outside and inside people. Culture lies outside of people in that one can identify various customs, practices, and institutions that mold people's behavior. Culture lies inside people in that everything that happens to them is viewed through a cultural lens—a way of thinking—that cannot be set aside. Moreover, because a cultural background is widely shared, members feel little need to discuss it with others and often take it for granted. For example, you probably don't spend much time thinking about the importance of living in rectangular rooms, trying to minimize body odor, limiting yourself to one spouse at a time, or using credit cards to obtain material goods and services.

Even though we generally fail to appreciate its influence, our cultural heritage has a pervasive impact on our thoughts, feelings, and behavior (Matsumoto & Juang, 2008; Triandis, 2007). For example, in North America, when people are invited to dinner in someone's home, they generally show their appreciation of their host's cooking efforts by

eating all of the food they are served. In India, this behavior would be insulting to the host, as guests are expected to leave some food on their plates. The leftover food acknowledges the generosity of the host, implying that he or she provided so much food the guest could not eat it all (Moghaddam, Taylor, & Wright, 1993).

The influence of culture is everywhere. However, generalizations about cultural groups must always be tempered by the realization that great diversity also exists within any society or ethnic group (Markus & Hamedani, 2007). Researchers may be able to pinpoint genuinely useful insights about Ethiopian, Korean American, or Ukrainian culture, for example. But it would be foolish to assume that all Ethiopians, Korean Americans, or Ukrainians exhibit identical behavior. It is also important to realize that both differences and similarities in behavior occur across cultures. As we will see repeatedly, psychological processes are characterized by both cultural variance and invariance. Caveats aside, if we hope to achieve a sound understanding of human behavior, we need to consider cultural determinants.

Theme 6: Heredity and Environment Jointly Influence Behavior



Are individuals who they are—athletic or artistic, quick tempered or calm, shy or outgoing, energetic or laid back—because of their genetic inheritance or because of their upbringing? This question about the importance of nature versus nurture, or heredity versus environment, has been asked in one form or another since ancient times. Historically, the nature-versus-nurture question was framed as an all-or-none proposition. In other words, theorists argued that personal traits and abilities are governed either entirely by heredity or entirely by environment. John B. Watson, for instance, asserted that personality and ability depend almost exclusively on an individual's environment. In contrast, Sir Francis Galton, a 19th-century pioneer in mental testing (see Chapter 9), maintained that personality and ability depend almost entirely on genetic inheritance.

Today, most psychologists agree that heredity and environment are both important. A century of research has shown that genetics and experience jointly influence an individual's intelligence, temperament, personality, and susceptibility to many psychological disorders (Grigerenko & Sternberg, 2003; Plomin, 2004; Rutter, 2006). If we ask whether individuals are born or made, psychology's answer is "Both." This does not mean that nature versus nurture is a dead issue. Lively debate about the *rela-*



© Photo by David McNew/Getty Images

Nature or nurture? As a young actress, Lindsay Lohan appeared to have a wonderful career ahead of her. But then it began unraveling, as she battled alcohol and drug problems, started exhibiting erratic behavior, and became embroiled in a host of legal problems. What might account for this deterioration? Heredity? Environment? Or some combination of the two? One could point to experience, as she came from a broken home that was apparently riddled with parental conflict. But one could also speculate about the role of genetics, as her father has had his own issues with alcohol, and he has indicated that his father was an alcoholic. It is often very difficult to tease apart the intertwined contributions of heredity and environment. In any event, the nature versus nurture question comes up endlessly in efforts to understand behavior.

tive influence of genetics and experience continues unabated. Furthermore, psychologists are actively seeking to understand the complex ways in which genetic inheritance and experience interact to mold behavior.

Theme 7: People's Experience of the World Is Highly Subjective



Even elementary perception—for example, of sights and sounds—is not a passive process. People actively process incoming stimulation, selectively focusing on some aspects of that stimulation while ignoring others. Moreover, they impose organiza-

tion on the stimuli that they pay attention to. These tendencies combine to make perception personalized and subjective.

The subjectivity of perception was demonstrated nicely in a classic study by Hastorf and Cantril (1954). They showed students at Princeton and Dartmouth universities a film of a recent football game between the two schools. The students were told to watch for rules infractions. Both groups saw the same film, but the Princeton students “saw” the Dartmouth players engage in twice as many infractions as the Dartmouth students “saw.” The investigators concluded that the game “actually was many different games and that each version of the events that transpired was just as ‘real’ to a particular person as other versions were to other people” (Hastorf & Cantril, 1954). In this study, the subjects’ perceptions were swayed by their motives. It shows how people sometimes see what they *want* to see.

Other studies reveal that people also tend to see what they *expect* to see. For example, Harold Kelley (1950) showed how perceptions of people are influenced by their reputation. Kelley told students that their class would be taken over by a new lecturer, whom they would be asked to evaluate later. Before the class, the students were given a short description of the incoming instructor, with one important variation. Half the students were led to expect a “warm” person, while the other half were led to expect a “cold” one (see **Figure 1.9**). All the subjects were exposed to the same 20 minutes of lecture and interaction with the new instructor. However, the group of subjects who *expected* a warm person rated the instructor as more considerate, sociable, humorous, good natured, informal, and humane

Mr. Blank is a graduate student in the Department of Economics and Social Science here at M.I.T. He has had three semesters of teaching experience in psychology at another college. This is his first semester teaching Ec. 70. He is 26 years old, a veteran, and married. People who know him consider him to be a very *warm* person, industrious, critical, practical, and determined.

Preferred Stock and Gazette Technologies.

Figure 1.9

Manipulating person perception. Read the accompanying description of Mr. Blank carefully. If you were about to hear him give a lecture, would this description bias your perceptions of him? You probably think not, but when Kelley (1950) altered one adjective in this description (replacing the word *warm* with *cold*), the change had a dramatic impact on subjects’ ratings of the guest lecturer.

SOURCE: Description from Kelley, H. H. (1950). The warm-cold variable in first impressions of persons. *Journal of Personality*, 8, 431–439. Copyright © 1950, John Wiley and Sons.

CONCEPT CHECK 1.3

Identifying the Contributions of Major Theorists and Researchers

Check your recall of the principal ideas of important theorists and researchers covered in this chapter by matching the people listed on the left with the appropriate contributions described on the right. If you need help, the crucial pages describing each person's ideas are listed in parentheses. Fill in the letters for your choices in the spaces provided on the left. You'll find the answers in Appendix A.

Major Theorists and Researchers

- _____ 1. John B. Watson (pp. 8–9)
- _____ 2. Sigmund Freud (pp. 7–8)
- _____ 3. Wilhelm Wundt (p. 4)
- _____ 4. William James (pp. 5–6)
- _____ 5. Margaret Floy Washburn (p. 6)
- _____ 6. B. F. Skinner (pp. 9–10)
- _____ 7. Carl Rogers (pp. 10–12)

Key Ideas and Contributions

- a. This theorist was the founder of behaviorism. He proposed that psychologists should abandon the study of consciousness altogether.
- b. This individual, who authored *The Animal Mind* (1908), was the first woman to receive a Ph.D. in psychology.
- c. This influential American researcher showed that organisms tend to repeat responses that lead to positive outcomes. He also argued that free will is an illusion.
- d. Widely viewed as the founder of psychology, this person established the first laboratory for research in psychology in 1879.
- e. This theorist focused on the unconscious and sexuality, causing considerable controversy. He also invented psychoanalytic theory.
- f. This Harvard scholar was the chief architect of functionalism, arguing that psychology should investigate the *functions* rather than the *structure* of consciousness.
- g. This advocate of humanism took an optimistic view of human nature and was a major critic of psychoanalytic and behavioral theories.

than the subjects in the group who had expected a cold person.

Thus, it is clear that motives and expectations color people's experiences. To some extent, individuals see what they want to see or what they expect to see. This subjective bias in perception turns out to explain a variety of behavioral tendencies that would otherwise be perplexing (Pronin, Gilovich, & Ross, 2004; Pronin, Lin, & Ross, 2002).

Human subjectivity is precisely what the scientific method is designed to counteract. In using the scientific approach, psychologists strive to make their observations as objective as possible. In some respects, overcoming subjectivity is what science is all about.

Left to their own subjective experience, people might still believe that the earth is flat and that the sun revolves around it. Thus, psychologists are committed to the scientific approach because they believe it is the most reliable route to accurate knowledge.

Now that you have been introduced to the text's organizing themes, let's turn to an example of how psychological research can be applied to the challenges of everyday life. In our first Personal Application, we'll focus on a subject that should be highly relevant to you: how to be a successful student. In the Critical Thinking Application that follows it, we discuss the nature and importance of critical thinking skills.

REVIEW OF KEY LEARNING GOALS

1.14 Psychology is empirical because psychologists base their conclusions on observation through research rather than reasoning or common sense. Psychology is theoretically diverse, as there are many competing schools of thought in the field. This diversity has fueled progress and is a strength rather than a weakness. Psychology also evolves in a socio-historical context, as trends, issues, and values in society influence what goes on in psychology, and vice versa.

1.15 Behavior is determined by multiple causes, as most aspects of behavior are influenced by complex networks of interacting factors. Although cultural heritage is often taken for granted, it has a pervasive impact on people's thoughts, feelings, and behavior. Lively debate about the relative importance of nature versus nurture continues, but it is clear that heredity and environment jointly influence behavior. People's experience of the world is highly subjective, as they sometimes see what they want to see or what they expect to see.

Improving Academic Performance

Answer the following “true” or “false.”

- ___ 1 If you have a professor who delivers chaotic, hard-to-follow lectures, there is little point in attending class.
- ___ 2 Cramming the night before an exam is an effective method of study.
- ___ 3 In taking lecture notes, you should try to be a “human tape recorder” (that is, write down everything your professor says).
- ___ 4 You should never change your answers to multiple-choice questions because your first hunch is your best hunch.

All of the above statements are false. If you answered them all correctly, you may have already acquired the kinds of skills and habits that facilitate academic success. If so, however, you are *not* typical. Today, many students enter college with poor study skills and habits—and it’s not entirely their fault. The American educational system generally provides minimal instruction on good study techniques. In this first Application, we will try to remedy this situation to some extent by reviewing some insights that psychology offers on how to improve academic performance. We will discuss how to promote better study habits, how to enhance reading efforts, how to get more out of lectures, and how to improve test-taking strategies. You may also want to jump ahead and read the Personal Application for Chapter 7, which focuses on how to improve everyday memory.

Developing Sound Study Habits

People tend to assume that academic performance in college is largely determined by students’ intelligence or general mental ability. This belief is supported by the fact that college admissions tests (the SAT and ACT), which basically assess general cognitive ability, predict college grades fairly well (Berry & Sackett, 2009; Kobrin et al., 2008). What is far less well known, however, is

that measures of study skills, habits, and attitudes also predict college grades pretty well. In a recent, large-scale review of 344 independent samples consisting of over 72,000 students, Crede and Kuncel (2008) reported that aggregate measures of study skills and habits predicted college grades almost as well as admissions tests did and that they accounted for variability in performance that the admissions tests could not account for. In other words, this massive review of evidence found that study habits are almost as influential as ability in determining college success. The practical meaning of this finding is that most students probably underestimate the importance of their study skills. And bear in mind, whereas most adults probably cannot increase their mental ability much, they can usually enhance their study habits considerably.

In any event, the first step toward effective study habits is to face up to the reality that studying usually involves hard work. You don’t have to feel guilty if you don’t look forward to studying. Most students don’t. Once you accept the premise that studying doesn’t come naturally, it should be apparent that you need to set up an organized program to promote adequate study. According to Siebert and Karr (2003), such a program should include the following considerations:

1. *Set up a schedule for studying.* If you wait until the urge to study strikes you, you may still be waiting when the exam rolls around. Thus, it is important to allocate definite times to studying. Review your various time obligations (work, chores, and so on) and figure out in advance when you can study. When allotting certain times to studying, keep in mind that you need to be wide awake and alert. Be realistic about how long you can study at one time before you wear down from fatigue. Allow time for study breaks—they can revive sagging concentration.

It’s important to write down your study schedule. A written schedule serves as a re-

KEY LEARNING GOALS

- 1.16** Review three important considerations in designing a program to promote adequate studying.
- 1.17** Discuss some strategies for enhancing reading comprehension and for getting more out of lectures.
- 1.18** Summarize advice provided on improving test-taking strategies.

minder and increases your commitment to following it. You should begin by setting up a general schedule for the quarter or semester, like the one in **Figure 1.10** on the next page. Then, at the beginning of each week, plan the specific assignments that you intend to work on during each study session. This approach to scheduling should help you avoid cramming for exams at the last minute. Cramming is not an effective study strategy for most students (Underwood, 1961; Wong, 2006; Zechmeister & Nyberg, 1982). It will strain your memorization capabilities, can tax your energy level, and may stoke the fires of test anxiety.

In planning your weekly schedule, try to avoid the tendency to put off working on major tasks such as term papers and reports. Time-management experts such as Alan Lakein (1996) point out that many people tend to tackle simple, routine tasks first, saving larger tasks for later when they supposedly will have more time. This common tendency leads many individuals to repeatedly delay working on major assignments until it’s too late to do a good job. A good way to avoid this trap is to break major assignments down into smaller tasks that can be scheduled individually.

2. *Find a place to study where you can concentrate.* Where you study is also important. The key is to find a place where distractions are likely to be minimal. Most people cannot study effectively while TV shows or music are on or while other people are talking. Don’t depend on willpower to carry you through such distractions. It’s much easier to plan ahead and avoid the distractions altogether. In fact, you would be wise to set up one or two specific places to use solely for study (Hettich, 1998).

Figure 1.10

One student's general activity schedule for a semester. Each week the student fills in the specific assignments to work on during each study period.

Weekly Activity Schedule							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8 A.M.						Work	
9 A.M.	History	Study	History	Study	History	↓	
10 A.M.	Psychology	French	Psychology	French	Psychology	↓	
11 A.M.	Study	↓	Study	↓	Study	↓	
Noon	Math	Study	Math	Study	Math	↓	Study
1 P.M.							↓
2 P.M.	Study	English	Study	English	Study		↓
3 P.M.	↓	↓	↓	↓	↓		↓
4 P.M.							
5 P.M.							
6 P.M.	Work	Study	Study	Work			Study
7 P.M.	↓	↓	↓	↓			↓
8 P.M.							
9 P.M.							
10 P.M.	↓			↓			↓

© Cengage Learning 2013

3. *Reward your studying.* One reason that it is so difficult to be motivated to study regularly is that the payoffs often lie in the distant future. The ultimate reward, a degree, may be years away. Even short-term rewards, such as an A in the course, may be weeks or months away. To combat this problem, it helps to give yourself immediate, tangible rewards for studying, such as a snack, TV show, or phone call to a friend. Thus, you should set realistic study goals for yourself, then reward yourself when you meet them. The systematic manipulation of rewards involves harnessing the principles of *behavior modification* described by B. F. Skinner and other behavioral psychologists. These prin-

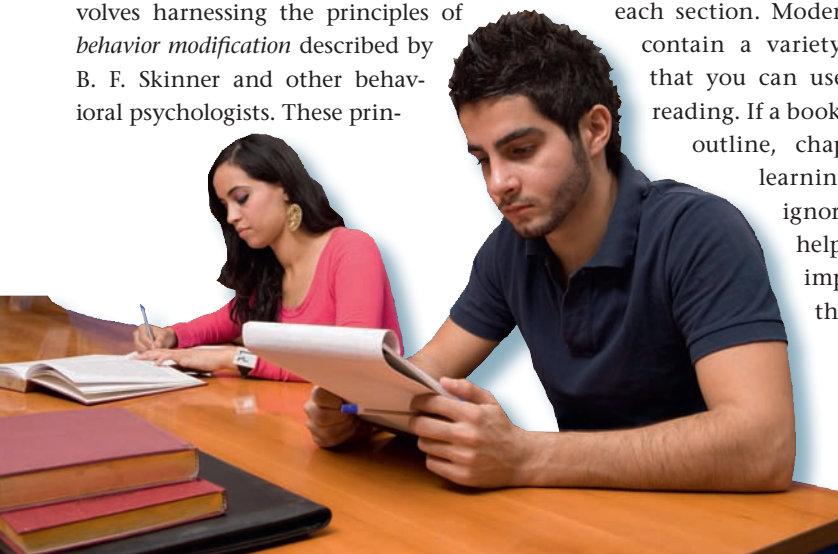
ciples are covered in the Chapter 6 Personal Application.

Improving Your Reading

Much of your study time is spent reading and absorbing information. The keys to improving reading comprehension are to preview reading assignments section by section, work hard to actively process the meaning of the information, strive to identify the key ideas of each paragraph, and carefully review these key ideas after each section. Modern textbooks often contain a variety of learning aids that you can use to improve your reading. If a book provides a chapter outline, chapter summary, or learning objectives, don't ignore them. They can help you recognize the important points in the chapter. Graphic organizers (such as the Concept Charts available online for this text) can also enhance understanding of text

material (Nist & Holschuh, 2000). A lot of effort and thought go into formulating these and other textbook learning aids. It is wise to take advantage of them.

Another important issue related to textbook reading is whether and how to mark up reading assignments. Many students deceive themselves into thinking that they are studying by running a marker through a few sentences here and there in their text. If they do so without thoughtful selectivity, they are simply turning a textbook into a coloring book. This situation probably explains why some professors are skeptical about the value of highlighting in textbooks. Nonetheless, research suggests that highlighting textbook material *is* a useful strategy—if students are reasonably effective in focusing on the main ideas in the material and if they subsequently review what they have highlighted (Caverly, Orlando, & Mullen, 2000). When executed effectively, highlighting can foster active reading, improve reading comprehension, and reduce the amount of material that must be reviewed later (Van Blerkom, 2006). The key to effective text marking is to identify (and highlight) only the main ideas, key supporting details, and technical terms (Daiek & Anter, 2004). Most textbooks are



© Paul Cox/arabianEye/Corbis

carefully crafted such that every paragraph has a purpose for being there. Try to find the sentence or two that best captures the purpose of each paragraph. Text marking is a delicate balancing act. If you highlight too little of the content, you are not identifying enough of the key ideas. But if you highlight too much of the content, you are not going to succeed in condensing what you have to review to a manageable size.

Getting More Out of Lectures

Lectures are sometimes boring and tedious. But it is a simple fact that poor class attendance is associated with poor grades. For example, in one study, Lindgren (1969) found that absences from class were much more common among “unsuccessful” students (grade average C- or below) than among “successful” students (grade average B or above), as shown in **Figure 1.11**. Even

when you have an instructor who delivers hard-to-follow lectures, it is still important to go to class. If nothing else, you can get a feel for how the instructor thinks, which can help you anticipate the content of exams and respond in the manner expected by your professor.

Fortunately, most lectures are reasonably coherent. Studies indicate that attentive, accurate note taking is associated with enhanced learning and performance in college classes (Titsworth & Kiewra, 2004; Williams & Eggert, 2002). However, research also shows that many students’ lecture notes are surprisingly incomplete, with the average student often recording less than 40% of the crucial ideas in a lecture (Armbruster, 2000). Thus, the key to getting more out of lectures is to stay motivated, stay attentive, and expend the effort to make your notes as complete as possible. Books on study skills (Longman & Atkinson, 2005; McWhorter,

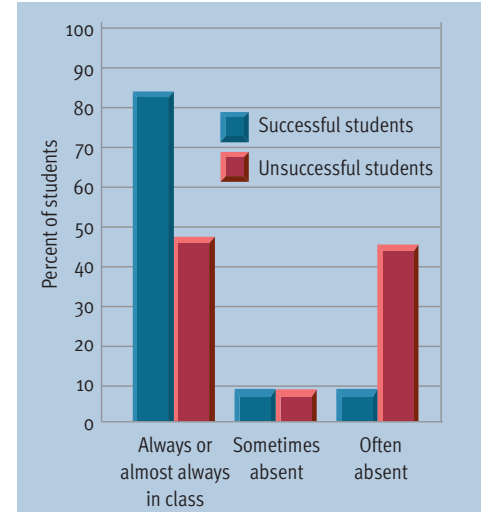
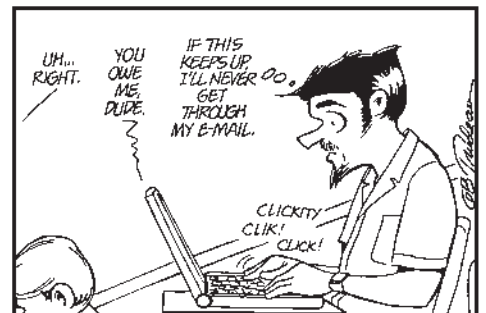
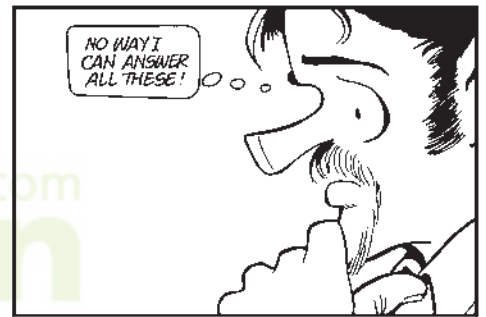
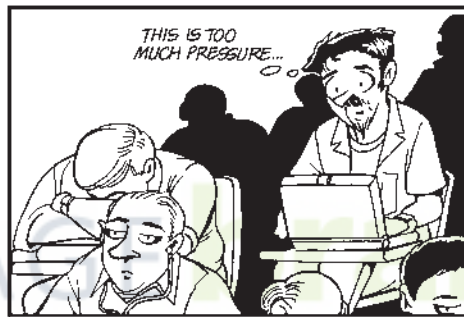
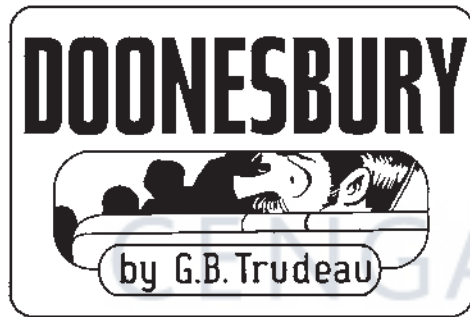


Figure 1.11 Attendance and grades. When Lindgren (1969) compared the class attendance of successful students (B average or above) and unsuccessful students (C- average or below), he found a clear association between poor attendance and poor grades.



2007) offer a number of suggestions on how to take good-quality lecture notes, some of which are summarized here:

- Extracting information from lectures requires *active listening*. Focus full attention on the speaker. Try to anticipate what's coming and search for deeper meanings.
- You are not supposed to be a human tape recorder. Insofar as possible, try to write down the lecturer's thoughts *in your own words*. Doing so forces you to organize the ideas in a way that makes sense to you.
- In taking notes, pay attention to clues about what is most important. These clues may range from subtle hints, such as an instructor repeating a point, to not-so-subtle hints, such as an instructor saying "You'll run into this again."
- In delivering their lectures most professors follow an organized outline, which they may or may not share with the class (on the blackboard or via a presentation tool, such as PowerPoint). Insofar as you can decipher the outline of a lecture, try to organize your notes accordingly.
- *Asking questions* during lectures can be helpful. Doing so keeps you actively involved in the lecture and allows you to clarify points that you may have misunderstood. Many students are more bashful about asking questions than they should

be. They don't realize that most professors welcome questions.

Improving Test-Taking Strategies

Let's face it—some students are better than others at taking tests. **Testwiseness is the ability to use the characteristics and format of a cognitive test to maximize one's score.** Students clearly vary in testwiseness, and such variations are reflected in performance on exams (Geiger, 1997; Rogers & Yang, 1996). Testwiseness is *not* a substitute for knowledge of the subject matter. However, skill in taking tests can help you show what you know when it is critical to do so (Flippo, Becker & Wark, 2000).

A number of myths exist about the best way to take tests. For instance, it is widely believed that students shouldn't go back and change their answers to multiple-choice questions. Benjamin, Cavell, and Shallenberger (1984) found this to be the dominant belief among college *faculty* as well as students (see **Figure 1.12**). However, the old adage that "your first hunch is your best hunch" on tests has been shown to be wrong. Empirical studies clearly and consistently indicate that, over the long run, changing answers pays off. Benjamin

and his colleagues reviewed 20 studies on this issue. Their findings are presented in **Figure 1.13**. As you can see, answer changes that go from a wrong answer to a right answer outnumber changes that go from a right answer to a wrong one by a sizable margin. The popular belief that answer changing is harmful is probably attributable to painful memories of right-to-wrong changes. In any case, you can see how it pays to be familiar with sound test-taking strategies.

General Tips

The principles of testwiseness were first described by Millman, Bishop, and Ebel (1965). Here are a few of their general ideas:

- If efficient time use appears crucial, set up a mental schedule for progressing through the test. Make a mental note to check whether you're one-third finished when a third of your time is gone.
- Don't waste time pondering difficult-to-answer questions excessively. If you have no idea at all, just guess and go on. If you need to devote a good deal of time to the question, skip it and mark it so you can return to it later if time permits.
- Adopt the appropriate level of sophistication for the test. Don't read things into questions. Sometimes students make things



Figure 1.12

Beliefs about the effects of answer changing on tests. Ludy Benjamin and his colleagues (1984) asked 58 college faculty whether changing answers on tests is a good idea. Like most students, the majority of the faculty felt that answer changing usually hurts a student's test score, even though the research evidence contradicts this belief (see **Figure 1.13**).

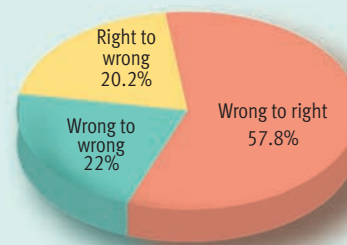


Figure 1.13

Actual effects of changing answers on multiple-choice tests. When the data from all the relevant studies were combined by Benjamin et al. (1984), they indicated that answer changing on tests generally *increased* rather than *reduced* students' test scores. It is interesting to note the contrast between beliefs about answer changing (see **Figure 1.12**) and the actual results of this practice.

Figures 1.12 & 1.13: © Cengage Learning 2013

more complex than they were intended. Often, simple-looking questions are just what they appear to be.

- If you complete all of the questions and still have some time remaining, review the test. Make sure that you have recorded your answers correctly. If you were unsure of some answers, go back and reconsider them.

Tips for Multiple-Choice Exams

Sound test-taking strategies are especially important with multiple-choice (and true-false) questions. These types of questions often include clues that may help you converge on the correct answer (Mentzer, 1982; Weiten, 1984). You may be able to improve your performance on such tests by considering the following points (Flippo, 2000; Millman et al., 1965; Smith, 2005; Van Blerkom, 2006):

- Always read each question completely. Continue reading even if you find your anticipated answer among the options. A more complete option may be farther down the list.
- Learn how to quickly eliminate options that are highly implausible. Many questions have only two plausible options, accompanied by “throwaway” options for filler. You should work at spotting these implausible options so that you can quickly discard them and narrow your task.
- Be alert to the fact that information relevant to one question is sometimes given away in another test item.
- On items that have “all of the above” as an option, if you know that just two of the

options are correct, you should choose “all of the above.” If you are confident that one of the options is incorrect, you should eliminate this option and “all of the above” and choose from the remaining options.

- Options that represent broad, sweeping generalizations tend to be incorrect. You should be vigilant for words such as *always*, *never*, *necessarily*, *only*, *must*, *completely*, *totally*, and so forth that create these improbable assertions.

- In contrast, options that represent carefully qualified statements tend to be correct. Words such as *often*, *sometimes*, *perhaps*, *may*, and *generally* tend to show up in these well-qualified statements.

Tips for Essay Exams

Little research has been done on testwise-ness as it applies to essay exams. That’s because relatively few clues are available in the essay format. Nonetheless, various books (Flippo, 2000; Pauk, 1990; Wong, 2006) offer tips based on expert advice. Performance on essay tests can be enhanced by (1) looking over the questions first and making judicious time allocations, (2) taking some time on the front end to plan the organization of your answer instead of plunging in without planning, and (3) making liberal use of the technical terminology that you have learned in the course.

In summary, sound study skills and habits are crucial to academic success. Intelligence alone won’t do the job (although it

certainly helps). Good academic skills do not develop overnight. They are acquired gradually, so be patient with yourself. Fortunately, tasks such as reading textbooks, writing papers, and taking tests get easier with practice. Ultimately, I think you’ll find that the rewards—knowledge, a sense of accomplishment, and progress toward a degree—are worth the effort.

REVIEW OF KEY LEARNING GOALS

1.16 To foster sound study habits, you should devise a written study schedule and reward yourself for following it. Try to avoid the tendency to put off working on major tasks. You should also try to find one or two specific places for studying that are relatively free of distractions.

1.17 You should use active reading techniques to select the most important ideas from the material you read. Highlighting textbook material is a useful strategy—if you are reasonably effective in focusing on the main ideas in the material and if you subsequently review what you have highlighted. The key to good note taking is to strive to make lecture notes as complete as possible. It’s important to use active listening techniques and to record lecturers’ ideas in your own words.

1.18 In taking tests, it’s a good idea to devise a schedule for progressing through an exam, to adopt the appropriate level of sophistication, to avoid wasting time on troublesome questions, and to review your answers. On multiple-choice tests it is wise to read questions completely, to quickly eliminate implausible options, and to be wary of sweeping generalizations. On essay tests, it helps to allocate time wisely, to emphasize good organization, and to use technical vocabulary when appropriate.

KEY LEARNING GOALS

- 1.19** Explain the nature of critical thinking skills.
1.20 Evaluate some weaknesses in evolutionary explanations for gender differences in spatial abilities.

If you ask any group of professors, parents, employers, or politicians, “What is the most important outcome of an education?” The most popular answer is likely to be “the development of the ability to think critically.” **Critical thinking is purposeful, reasoned, goal-directed thinking that involves solving problems, formulating inferences, working with probabilities, and making carefully thought-out decisions.** Critical thinking is the use of cognitive skills and strategies that increase the probability of a desirable outcome. Such outcomes would include good career choices, effective decisions in the workplace, wise investments, and so forth. In the long run, critical thinkers should have more desirable outcomes than people who are not skilled in critical thinking (Halpern, 1998, 2003). Here are some of the skills exhibited by critical thinkers:

- They understand and use the principles of scientific investigation. (How can the effectiveness of punishment as a disciplinary procedure be determined?)
- They apply the rules of formal and informal logic. (If most people disapprove of sex sites on the Internet, why are these sites so popular?)
- They carefully evaluate the quality of information. (Can I trust the claims made by this politician?)
- They analyze arguments for the soundness of the conclusions. (Does the rise in drug use mean that a stricter drug policy is needed?)

The topic of thinking has a long history in psychology. It dates back to Wilhelm Wundt in the 19th century. Modern cognitive psychologists have found that a useful model of critical thinking has at least two components: (1) knowledge of the skills of critical thinking—the *cognitive component*, and (2) the attitude or disposition of a critical thinker—the *emotional or affective component*. Both are needed for effective critical thinking.

Developing Critical Thinking Skills: An Introduction

Instruction in critical thinking is based on two assumptions: (1) a set of skills or strategies exists that students can learn to recognize and apply in appropriate contexts; (2) if the skills are applied appropriately, students will become more effective thinkers (Halpern, 2007). Critical thinking skills that would be useful in any context might include understanding how reasons and evidence support or refute conclusions; distinguishing among facts, opinions, and reasoned judgments; using principles of likelihood and uncertainty when thinking about probabilistic events; generating multiple solutions to problems and working systematically toward a desired goal; and understanding how causation is determined. This list provides some typical examples of what is meant by the term *critical thinking skills*. Because these skills are useful in a wide variety of contexts, they are sometimes called *transcontextual skills*.

It is of little use to know the skills of critical thinking if you are unwilling to exert the hard mental work to use them or if you have a sloppy or careless attitude toward thinking. A critical thinker is willing to plan, flexible in thinking, persistent, able to admit mistakes and make corrections, and mindful of the thinking process. The use of the word *critical* represents the notion of a critique or evaluation of thinking processes and outcomes. It is not meant to be negative (as in a “critical person”) but rather to convey that critical thinkers are vigilant about their thinking (Riggio & Halpern, 2006).

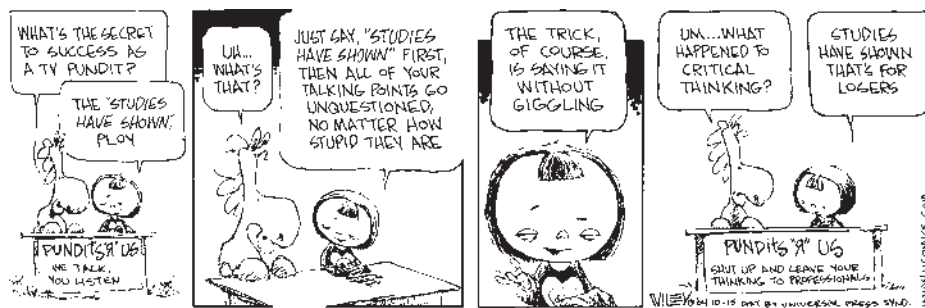
The Need to Teach Critical Thinking

Decades of research on instruction in critical thinking have shown that the skills and attitudes of critical thinking need to be deliberately and consciously taught, because they often do not develop by themselves with standard instruction in a content area (Nisbett, 1993). For this reason, each chapter in this text ends with a Critical Thinking Application. The material presented in each of these Critical Thinking Applications relates to the chapter topics. However, the focus is on how to think about a particular issue, line of research, or controversy. Because the emphasis is on the thinking process, you may be asked to consider conflicting interpretations of data, judge the credibility of information sources, or generate your own testable hypotheses. The specific critical thinking skills highlighted in each lesson are summarized in a table so that they are easily identified. Some of the skills will show up in multiple chapters. The goal is to help you spontaneously select the appropriate critical thinking skills when you encounter new information. Repeated practice with selected skills across chapters should help you develop this ability.

An Example

As explained in the main body of the chapter, *evolutionary psychology* is emerging as an influential school of thought. To show you how critical thinking skills can be applied to psychological issues, let’s examine the evolutionary explanation of gender differences in spa-

NON SEQUITUR



NON SEQUITUR © 2004 by Wiley Miller. Distributed by UNIVERSAL PRESS SYNDICATE. Reprinted with permission. All rights reserved.

tial talents and then use some critical thinking strategies to evaluate this explanation.

On the average, males tend to perform slightly better than females on most visual-spatial tasks, especially tasks involving mental rotation of images and navigation in space (Halpern, 2000; Silverman & Choi, 2005; see [Figure 1.14](#)). Irwin Silverman and his colleagues maintain that these gender differences originated in human evolution as a result of the gender-based division of labor in ancient hunting-and-gathering societies (Silverman & Phillips, 1998; Silverman et al., 2000). According to this analysis, males' superiority in mental rotation and navigation developed because the chore of *hunting* was largely assigned to men over the course of human history. These skills would have facilitated success on hunting trips (by helping men to traverse long distances, aim projectiles at prey, and so forth) and thus would have been favored by natural selection. In contrast, women in ancient societies generally had responsibility for *gathering* food rather than hunting it. This was an efficient division of labor because women spent much of their adult lives pregnant, nursing, or caring for the young. Therefore, they could not travel long distances. Silverman and Eals (1992) thus hypothesized that females ought to be superior to males on spatial skills that would have facilitated gathering, such as memory for locations. This is exactly what they found in a series of four studies. Thus, evolutionary psychologists explain gender differences in spatial ability—like other aspects of human behavior—in terms of how such abilities evolved to meet the adaptive pressures faced by our ancestors.

How can you critically evaluate these claims? If your first thought was that you need more information, good for you, because you are already showing an aptitude for critical thinking. Some additional information about gender differences in cogni-

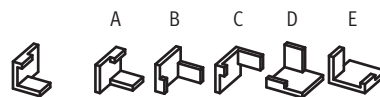


Figure 1.14
An example of a spatial task involving mental rotation. Spatial reasoning tasks can be divided into a variety of subtypes. Studies indicate that males perform slightly better than females on most, but not all, spatial tasks. The tasks on which males are superior often involve mentally rotating objects, such as in the problem shown here. In this problem, the person has to figure out which object on the right (A through E) could be a rotation of the object at the left. The answer is B.

SOURCE: Based on Stafford, R. E., & Gullikson, H. (1962). *Identical Blocks*, Form AA.

tive abilities is presented in Chapter 11 of this text. You also need to develop the habit of asking good questions, such as, “Are there alternative explanations for these results? Are there contradictory data?” Let’s briefly consider each of these questions.

Are there alternative explanations for gender differences in spatial skills? Well, there certainly are other explanations for males’ superiority on most spatial tasks. For example, one could attribute this finding to the gender-typed activities that males are encouraged to engage in more than females, such as playing with building blocks, Lego sets, Lincoln Logs, and various types of construction sets, as well as a variety of spatially oriented video games. These gender-typed activities appear to provide boys with more practice than girls on most types of spatial tasks (Voyer, Nolan, & Voyer, 2000), and experience with spatial activities appears to enhance spatial skills (Lizarraga & Ganuza, 2003). For example, one study found that just 10 hours of playing an action video game could produce substantial gains in spatial ability (Feng, Spence, & Pratt, 2007). If we can explain gender differ-

ences in spatial abilities in terms of disparities in the everyday activities of contemporary males and females, we may have no need to appeal to natural selection.

Are there data that run counter to the evolutionary explanation for modern gender differences in spatial skills? Again, the answer is yes. Some scholars who have studied hunting-and-gathering societies suggest that women often traveled long distances to gather food and that women were often involved in hunting (Adler, 1993). In addition, women wove baskets and clothing and worked on other tasks that required spatial thinking (Halpern, 1997). Moreover—think about it—men on long hunting trips obviously needed to develop a good memory for locations or they might never have returned home. So, there is room for some argument about exactly what kinds of adaptive pressures males and females faced in ancient hunting-and-gathering societies.

Thus, you can see how considering alternative explanations and contradictory evidence weakens the evolutionary explanation of gender differences in spatial abilities. The questions we raised about alternative explanations and contradictory data are two generic critical thinking questions that can be asked in a wide variety of contexts. The answers to these questions do *not* prove that evolutionary psychologists are wrong in their explanation of gender differences in visual-spatial skills. They do, however, *weaken* the evolutionary explanation. In thinking critically about psychological issues, you will see that it makes more sense to talk about the *relative strength of an argument* as opposed to whether an argument is right or wrong, because we will be dealing with complex issues that rarely lend themselves to being correct or incorrect.

Table 1.3 Critical Thinking Skills Discussed in This Application

Skill	Description
Looking for alternative explanations for findings and events	In evaluating explanations, the critical thinker explores whether there are other explanations that could also account for the findings or events under scrutiny.
Looking for contradictory evidence	In evaluating the evidence presented on an issue, the critical thinker attempts to look for contradictory evidence that may have been left out of the debate.

© Cengage Learning 2013

REVIEW OF KEY LEARNING GOALS

1.19 Critical thinking is the use of cognitive skills and strategies that increase the probability of a desirable outcome. A critical thinker is flexible, vigilant, able to admit mistakes, and mindful of the thinking process.

1.20 Evolutionary psychologists attribute gender differences in spatial abilities to the gender-based division of labor in hunting-and-gathering societies. However, alternative explanations have been offered for these differences, focusing on the gender-typed activities that modern males and females engage in. There also are contradictory data regarding the adaptive pressures faced by females and males in hunting-and-gathering societies.

Chapter 1 Practice Test

1. For which of the following is Wilhelm Wundt primarily known?
 - A. the establishment of the first formal laboratory for research in psychology
 - B. the distinction between mind and body as two separate entities
 - C. the discovery of how signals are conducted along nerves in the body
 - D. the development of the first formal program for training in psychotherapy
2. G. Stanley Hall is noteworthy in the history of psychology because he:
 - A. established the first American research laboratory in psychology.
 - B. launched America's first psychological journal.
 - C. was the driving force behind the establishment of the American Psychological Association.
 - D. did all of the above.
3. Which of the following approaches might William James criticize for examining a movie frame by frame instead of seeing the motion in the motion picture?
 - A. structuralism
 - B. functionalism
 - C. dualism
 - D. humanism
4. Which of the following approaches might suggest that forgetting to pick his mother up at the airport was Henry's unconscious way of saying that he did not welcome her visit?
 - A. psychoanalytic
 - B. behavioral
 - C. humanistic
 - D. cognitive
5. Fred, a tennis coach, insists that he can make any reasonably healthy individual into an internationally competitive tennis player. Fred is echoing the thoughts of:
 - A. Sigmund Freud.
 - B. John B. Watson.
 - C. Abraham Maslow.
 - D. William James.
6. Which of the following is a statement with which Skinner's followers would agree?
 - A. Most behavior is controlled by unconscious forces.
 - B. The goal of behavior is self-actualization.
 - C. Nature is more influential than nurture.
 - D. Free will is an illusion.
7. Which of the following approaches has the most optimistic view of human nature?
 - A. humanism
 - B. behaviorism
 - C. psychoanalysis
 - D. structuralism
8. Which of the following historical events created a demand for clinicians that was far greater than the supply?
 - A. World War I
 - B. the Depression
 - C. World War II
 - D. the Korean War
9. Which of the following is *not* an important interest of the positive psychology movement?
 - A. positive institutions and communities
 - B. positive symptoms in mental disorders
 - C. positive subjective experiences
 - D. positive individual traits
10. The study of the endocrine system and genetic mechanisms would most likely be undertaken by a:
 - A. clinical psychologist.
 - B. physiological psychologist.
 - C. social psychologist.
 - D. educational psychologist.
11. The fact that psychologists do not all agree about the nature and development of personality demonstrates:
 - A. that there are many ways of looking at the same phenomenon.
 - B. the fundamental inability of psychologists to work together in developing a single theory.
 - C. the failure of psychologists to communicate with one another.
 - D. the possibility that personality may simply be incomprehensible.
12. A multifactorial causation approach to behavior suggests that:
 - A. most behaviors can be explained best by single-cause explanations.
 - B. most behavior is governed by a complex network of interrelated factors.
 - C. data must be subjected to rigorous statistical analysis in order to make sense.
 - D. explanations of behavior tend to build up from the simple to the complex in a hierarchical manner.
13. Psychology's answer to the question of whether we are born or made tends to be:
 - A. we are born.
 - B. we are made.
 - C. we are both born and made.
 - D. neither.
14. In regard to changing answers on multiple-choice tests, research indicates that _____ changes tend to be more common than other types of changes.
 - A. wrong to right
 - B. right to wrong
 - C. wrong to wrong
15. Critical thinking skills:
 - A. are abstract abilities that cannot be identified.
 - B. usually develop spontaneously through normal content instruction.
 - C. usually develop spontaneously without any instruction.
 - D. need to be deliberately taught, because they often do not develop by themselves with standard content instruction.

1 A p. 4	6 D p. 10	7 A p. 11	12 B p. 25	11 A p. 24
2 D pp. 4-5	7 A p. 11	8 C p. 13	13 C pp. 26-27	12 B p. 25
3 A p. 6	8 C p. 13	9 B p. 17	14 A p. 32	14 A p. 32
4 A p. 7	9 B p. 17	10 B p. 21	15 D p. 34	15 D p. 34
5 B pp. 8-9	10 B p. 21			

Answers

Chapter 1 Media Resources

PsykTrek



To view a demo: www.cengage.com/psychology/psyktrak
To order: www.cengage.com/psychology/weiten

Go to the PsikTrek website or CD-ROM for further study of the concepts in this chapter. Both online and on the CD-ROM, PsikTrek includes dozens of learning modules with videos, animations, and quizzes, as well as simulations of psychological phenomena and a multimedia glossary that includes word pronunciations.

© Cengage Learning 2008

© Cengage Learning 2008

Visit Module 1a (*Psychology's Timeline*) to see a multimedia overview of psychology's evolution as a discipline.

Go to the Video Selector or Module 2e (*The Forebrain: Subcortical Structures*) to see historic footage of James Olds's discovery of "pleasure centers" in the brain (mentioned on page 14).

© Cengage Learning 2008

Go to the Video Selector or Module 5c (*Overview of Operant Conditioning*) to see pigeons playing Ping-Pong—the famous example of behavioral control by B.F. Skinner mentioned on page 10.

© Cengage Learning 2008

Check out the Critical Thinking Exercise for Unit 5 (*Theory Development and the Testing of Theories*) for an enlightening discussion of how one can evaluate the plausibility of competing theories, such as those introduced in this chapter.

Online Study Tools

Log in to **CengageBrain** to access the resources your instructor requires. For this book, you can access:

CourseMate brings course concepts to life with interactive learning, study, and exam preparation tools that support the printed textbook. A textbook-specific website, Psychology CourseMate includes an integrated interactive eBook and other interactive learning tools such as quizzes, flashcards, videos, and more.



WebTutor is more than just an interactive study guide. WebTutor is an anytime, anywhere customized learning solution with an eBook, keeping you connected to your textbook, instructor, and classmates.



CengageNow is an easy-to-use online resource that helps you study in less time to get the grade you want—NOW. Take a pre-test for this chapter and receive a personalized study plan based on your results that will identify the topics you need to review and direct you to online resources to help you master those topics. Then take a post-test to help you determine the concepts you have mastered and what you will need to work on. If your textbook does not include an access code card, go to CengageBrain.com to gain access.



Aplia. If your professor has assigned Aplia homework:

1. Sign in to your account
2. Complete the corresponding homework exercises as required by your professor.
3. When finished, click "Grade It Now" to see which areas you have mastered, which need more work, and detailed explanations of every answer.



Visit www.cengagebrain.com to access your account and purchase materials.

Answers to Concept Checks

Chapter 1

Concept Check 1.1

1. c. Sigmund Freud (1905, pp. 77–78), arguing that it is possible to probe into the unconscious depths of the mind.
2. a. Wilhelm Wundt (1874/1904, p. v), campaigning for a new, independent science of psychology.
3. b. William James (1890), commenting negatively on the structuralists' efforts to break consciousness into its elements and his view of consciousness as a continuously flowing stream.

Concept Check 1.2

1. b. B. F. Skinner (1971, p. 17), explaining why he believes that freedom is an illusion.
2. c. Carl Rogers (1961, p. 27), commenting on others' assertion that he had an overly optimistic (Pollyannaish) view of human potential and discussing humans' basic drive toward personal growth.
3. a. John B. Watson (1930, p. 103), dismissing the importance of genetic inheritance while arguing that traits are shaped entirely by experience.

Concept Check 1.3

1. a 2. e 3. d 4. f 5. b
6. c 7. g

This page contains answers for this chapter only