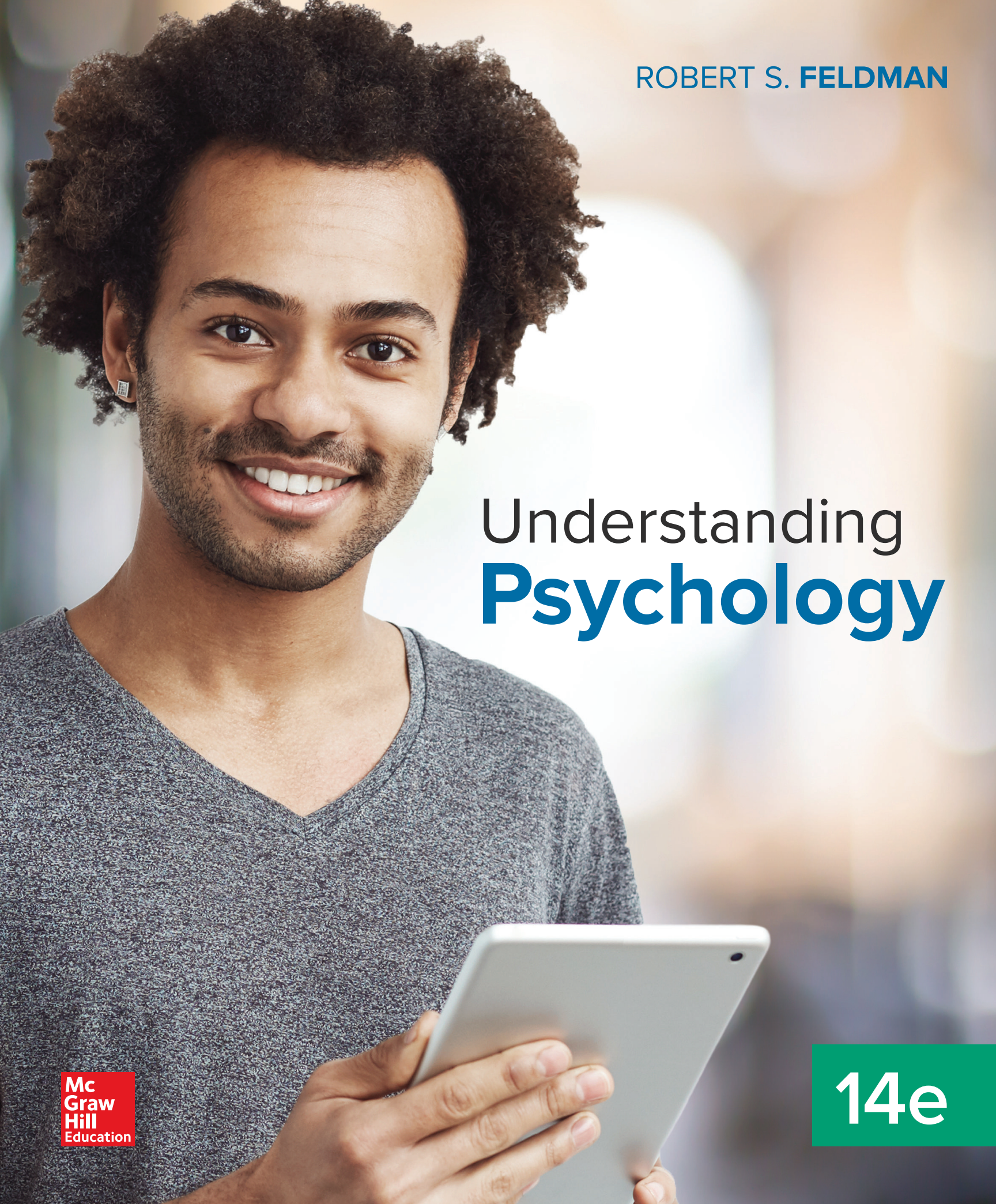


ROBERT S. **FELDMAN**

Understanding **Psychology**

Mc Graw Hill Education

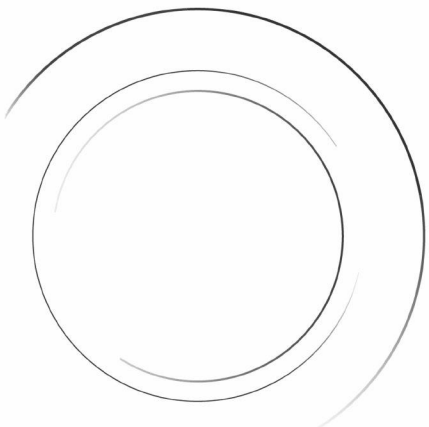
14e

Understanding Psychology

FOURTEENTH EDITION

Robert S. Feldman

University of Massachusetts Amherst



Mc Graw Hill Education

UNDERSTANDING PSYCHOLOGY, FOURTEENTH EDITION

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 LWI 21 20 19 18

Bound:
ISBN 978-1-260-19452-4
MHID 1-260-19452-3

Loose Leaf:
ISBN 978-1-260-19463-0
MHID 1-260-19463-9

Portfolio Manager: *Nancy Welcher*
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Design: *David W. Hash*
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Library of Congress Cataloging-in-Publication Data

Names: Feldman, Robert S. (Robert Stephen), 1947- author.
Title: Understanding psychology / Robert S. Feldman, University of Massachusetts Amherst.
Description: Fourteenth Edition. | Dubuque : McGraw-Hill Education, [2018] | Revised edition of the author's Understanding psychology, [2017]
Identifiers: LCCN 2018015406| ISBN 9781260194524 (hard cover : alk. paper) | ISBN 1260194523 (hard cover : alk. paper)
Subjects: LCSH: Psychology.
Classification: LCC BF121 .F34 2018 | DDC 150–dc23 LC record available at https://lccn.loc.gov/2018015406

Dedication
To
Jon, Leigh, Alex, Miles, Josh, Julie, Naomi,
Sarah, Jeff, Lilia, and Kathy

About the Author

ROBERT S. FELDMAN is Professor of Psychological and Brain Sciences and Senior Advisor to the Chancellor of the University of Massachusetts Amherst. A recipient of the College Distinguished Teacher Award, he teaches psychology classes ranging in size from 15 to nearly 500 students. During the course of more than three decades as a college instructor, he has taught undergraduate and graduate courses at Mount Holyoke College, Wesleyan University, and Virginia Commonwealth University in addition to the University of Massachusetts.

Professor Feldman, who initiated the Minority Mentoring Program at the University of Massachusetts, also has served as a Hewlett Teaching Fellow and Senior Online Teaching Fellow. He initiated distance-learning courses in psychology at the University of Massachusetts.

A Fellow of the American Psychological Association, the Association for Psychological Science, and the American Association for the Advancement of Science, Professor Feldman received a BA with High Honors from Wesleyan University and an MS and PhD from the University of Wisconsin-Madison. He is a winner of a Fulbright Senior Research Scholar and Lecturer Award and the Distinguished Alumnus Award from Wesleyan. He is past President of the Federation of Associations in Behavioral and Brain Sciences (FABBS) Foundation, which advocates for the field of psychology, and is on the board of the Social Psychology Network (SPN).

He has written and edited more than 250 books, book chapters, and scientific articles. He has edited *Development of Nonverbal Behavior in Children, Applications of Nonverbal Behavioral Theory and Research,* and *Improving the First Year of College: Research and Practice,* and co-edited *Fundamentals of Nonverbal Behavior*. He is also author of *P.O.W.E.R. Learning: Strategies for Success in College and Life*. His textbooks, which have been used by more than 2 million students around the world, have been translated into Spanish, French, Portuguese, Dutch, German, Italian, Chinese, Korean, and Japanese. His research interests include deception and honesty in everyday life, work that he described in *The Liar in Your Life*, a trade book published in 2009. His research has been supported by grants from the National Institute of Mental Health and the National Institute on Disabilities and Rehabilitation Research.

Professor Feldman loves music, is an enthusiastic pianist, and enjoys cooking and traveling. He serves on the Executive Committee and Board of New England Public Radio. He and his wife, also a psychologist, live in western Massachusetts in a home overlooking the Holyoke mountain range.

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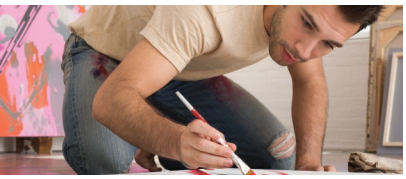

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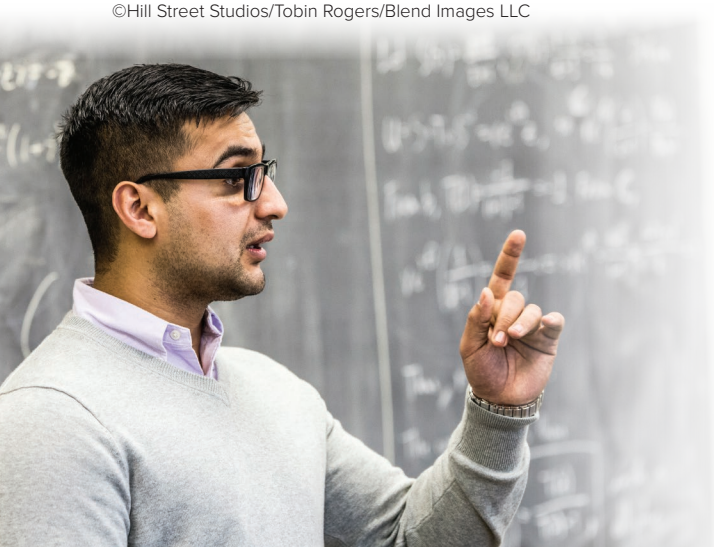

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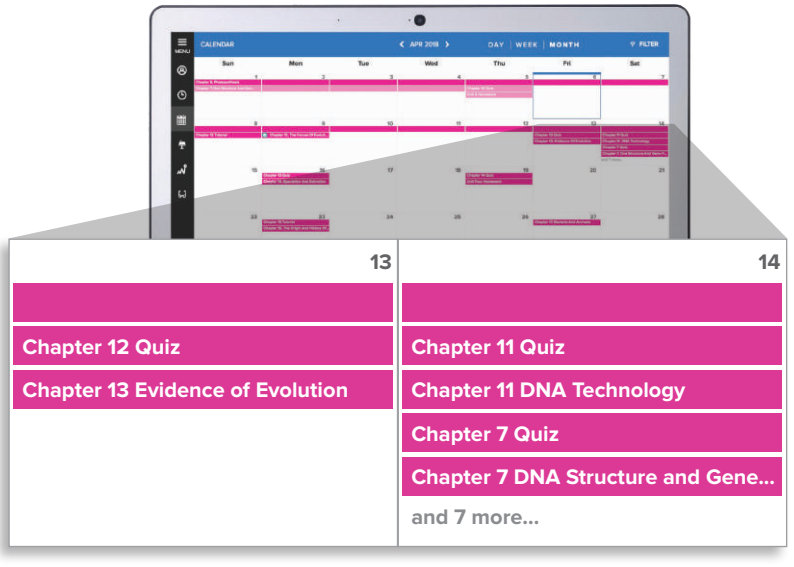

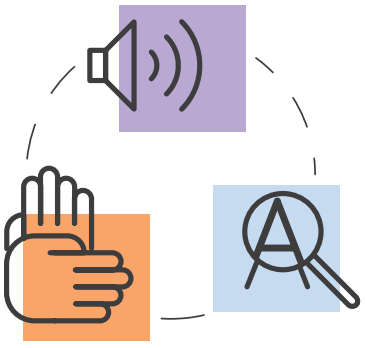

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Preface

Students First

If I were to use only two words to summarize my goal across the 14 editions of this introduction to psychology, as well as my teaching philosophy, that's what I would say: Students first.

I believe that an effective introduction to a discipline must be oriented to students–informing them, engaging them, and exciting them about the field and helping them connect it to their worlds. To achieve these goals, *Understanding Psychology*, 14/e, includes these features:

A PERSONALIZED EXPERIENCE THAT LEADS TO IMPROVED LEARNING AND RESULTS

How many students *think* they know everything about introductory psychology, but struggle on the first exam?

Students study more effectively with Connect and SmartBook.

- SmartBook helps students study more efficiently by highlighting where in the chapter to focus, asking review questions and pointing them to resources until they understand.
- Connect's assignments help students contextualize what they've learned through application, so they can better understand the material and think critically.
- Connect will create a personalized study path customized to individual student needs.
- Connect reports deliver information regarding performance, study behavior, and effort. So instructors can quickly identify students who are having issues, or focus on material that the class hasn't mastered.

THE POWER OF DATA

Understanding Psychology harnesses the power of data to improve the instructor and student experiences.

Better Data, Smarter Revision, Improved Results For this new edition, data were analyzed to identify the concepts students found to be the most difficult, allowing for expansion upon the discussion, practice, and assessment of challenging topics. The revision process for a new edition used to begin with gathering information from instructors about what they would change and what they would keep. Experts in the field were asked to provide comments that pointed out new material to add and dated material to review. Using all these reviews, authors would revise the material. But now, a new tool has revolutionized that model.

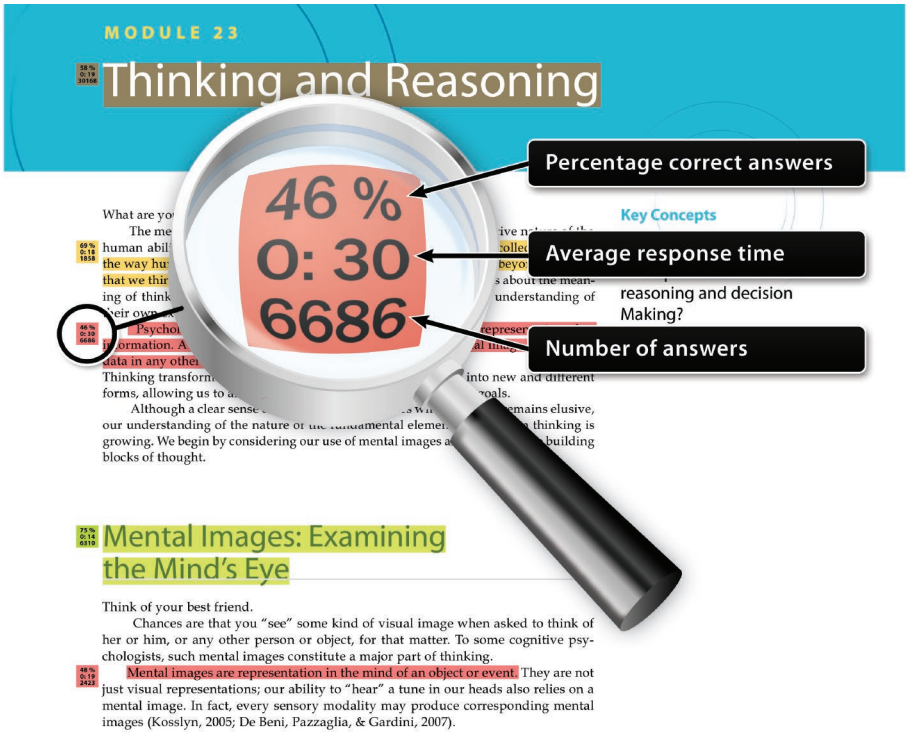
McGraw-Hill Education authors now have access to student performance data to analyze and to inform their revisions. This data is anonymously collected from the many students who use SmartBook, the adaptive learning system that provides students with individualized assessment of their own progress. Because virtually every text paragraph is tied to several questions that students answer while using the SmartBook, the specific concepts with which students are having the most difficulty are easily pinpointed through empirical data in the form of a "Heat Map" report.

THE POWER OF STUDENT DATA

Step 1.
Over the course of 3 years, data points showing concepts that caused students the most difficulty were anonymously collected from SmartBook for *Understanding Psychology, 14e.*

Step 2.
The data was provided to the author in the form of a **Heat Map,** which graphically illustrated "hot spots" in the text that impacted student learning.

Step 3.
The author used the **Heat Map** data to refine the content and reinforce student comprehension in the new edition. Additional quiz questions and assignable activities were created for use in Connect Psychology to further support student success.



4. RESULT.
Because the **Heat Map** provided empirically based feedback at the paragraph and even sentence level, the author was able to develop the new edition using precise student data that pinpointed concepts that caused students the most difficulty.

POWERFUL REPORTING

Whether a class is face-to-face, hybrid, or entirely online, Connect provides the tools needed to reduce the amount of time and energy that instructors must spend to administer their courses. Easy-to-use course management tools allow instructors to spend less time administering and more time teaching, while reports allow students to monitor their progress and optimize study time.

- The At-Risk Student Report provides instructors with one-click access to a dashboard that identifies students who are at risk of dropping out of the course due to low engagement levels.
- The Category Analysis Report details student performance relative to specific learning objectives and goals, including APA Learning Goals and Outcomes and levels of Bloom's Taxonomy.
- Connect Insight is a one-of-kind visual analytics dashboard–now available for both instructors and students–that provides at-a-glance information regarding student performance.
- The LearnSmart Reports allow instructors and students to easily monitor progress and pinpoint areas of weakness, giving each student a personalized study plan to achieve success.

STUDENT CRITICAL THINKING SKILLS

At the apply and analyze levels of Bloom's taxonomy, **Scientific Reasoning Activities** found in Connect offer in-depth arguments to sharpen students' critical thinking

skills and prepare them to be more discerning consumers of psychology in their everyday lives. For each chapter, there are multiple sets of arguments accompanied by auto-graded assessments requiring students to think critically about claims presented as facts. These exercises can also be used in Connect as group activities or for discussion.

New to the 14th edition, **Power of Process**, now available in McGraw-Hill Connect™, guides students through the process of critical reading, analysis, and writing. Faculty can select or upload their own content, such as journal articles, and assign analysis strategies to gain insight into students' application of the scientific method. For students, Power of Process offers a guided visual approach to exercising critical thinking strategies to apply before, during, and after reading published research. Additionally, utilizing the relevant and engaging research articles built into Power of Process, students are supported in becoming critical consumers of research.

STUDENT ACTIVE ENGAGEMENT

Concept Clips help students comprehend some of the most difficult ideas in introductory psychology. Colorful graphics and stimulating animations describe core concepts in a step-by-step manner, engaging students and aiding in retention. Concept Clips can be used as a presentation tool in the classroom or for student assessment. New in the 14th edition, Concept Clips are embedded in the ebook to offer an alternative presentation of these challenging topics.

Interactivities, assignable through Connect, engage students with content through experiential activities. New and updated activities include: Perspectives in Psychology; Correlations; Neurons; The Brain and Drugs; The Stages of Sleep; Levels of Processing; Maslow's Hierarchy of Needs; Naturalistic Observation; Observational Learning; Defense Mechanisms; Stereotypes and Prejudice; Heuristics; Personality Assessment; and First Impressions and Attraction.

Through the connection of psychology to students' own lives, concepts become more relevant and understandable. Powered by McGraw-Hill Education's Connect Psychology, **NewsFlash** exercises tie current news stories to key psychological principles and learning objectives. After interacting with a contemporary news story, students are assessed on their ability to make the link between real life and research findings.

Psychology at Work videos, assignable and assessable within McGraw-Hill Connect™, highlight nine careers in which knowledge of psychology is beneficial in the workplace. Each video introduces a person at work, who specifies how knowledge gained from taking introductory psychology in college is applied to the work environment.

Student Tools: Mastering the Material

Student success in psychology means mastering the material at a deep level. These are some of the tools that help students maximize their performance:

Study Alert
Differentiate the stages of sleep (stage 1, stage 2, stage 3, and REM sleep), which produce different brain-wave patterns.

STUDY ALERTS

Throughout, marginal notes point out important and difficult concepts and topics. These Study Alerts offer suggestions for learning the material effectively and for studying for tests.

FROM THE PERSPECTIVE OF . . .

Every chapter includes questions to help students connect psychological concepts with career realities. Called "From the Perspective of . . .," this feature helps students understand how psychology relates to various career fields.

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From the perspective of . . .

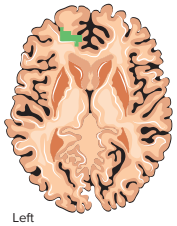
An Educator How might you use the findings in sleep research to maximize student learning?

NEUROSCIENCE IN YOUR LIFE

This updated feature emphasizes the importance of neuroscientific research within the various subfields of the discipline and in students' lives. Representative brain scans, with both caption and textual explanation, illustrate significant neuroscientific findings that increasingly influence the field of psychology. For example, one *Neuroscience in Your Life* feature explains why people are so emotional when they don't get enough sleep

NEUROSCIENCE IN YOUR LIFE: WHY ARE WE SO EMOTIONAL WHEN WE DON'T GET ENOUGH SLEEP?

After a restless night, many people feel increased stress and overreact to events in their lives the next day. Recent research has now identified the neural basis for these reactions. For example, in one study, participants were kept awake all night and then asked to perform an experiment involving exposure to emotional and neutral images. Participants who were sleep deprived reacted to the neutral images as if they were emotional, and they had less connectivity between the amygdala (a region of the brain that processes emotion) and the anterior cingulate cortex (a region of frontal cortex important for emotional regulation). The green in the scan below shows the area of anterior cingulate that has greater connectivity to the amygdala for sleep-rested than sleep-deprived participants. These findings suggest that sleep loss increases emotional reactivity by interfering with our ability to control our emotions (Simon et al., 2015).



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Student Learning: Content and Concepts

A major change in this new edition is an increased commitment to covering diversity. A new concluding module called "Epilogue: Diversity, Culture, Conflict, and Cooperation" addresses questions of how diversity affects individual behavior, how we observe and understand other people, and how our understandings (and misunderstandings) of our differences can lead to cooperation and/or conflict. Beyond the Epilogue, every chapter has a section called "Exploring Diversity," which examines how diversity affects psychology and vice-versa. These sections address ways to incorporate the concepts of diversity and culture across the curriculum as well as ways we can interact more effectively in this country and the world. In addition, the following information about new and revised topics and textual changes, including new definitions based on heat map data, provides a good indication of the content's currency and clarification for students.

Chapter 1–Introduction to Psychology

- Included new data on international versus U.S. psychologists
- Added a new figure on where psychologists work
- Clarified the concept of race
- Described race as a social construction
- Clarified the meaning of individual differences
- Clarified the meaning of universal principles
- Clarified introspection
- Redefined structuralism
- Redefined behavioral neuroscience
- Expanded the graphical timeline
- Noted discrepancies in salary and prestige between male and female psychologists
- Noted the impact of psychology on social policy

Chapter 2–Psychological Research

- Explained the use of Facebook in research
- Clarified the definition of theory
- Clarified the inability of correlational research to show causality
- Clarified experimental manipulation
- Clarified significant outcome
- Added a new example relating to the evaluation of research

Chapter 3–Neuroscience and Behavior

- Explained hydrogel-embedding methods of brain scanning
- Added new information on using computers to assist movement in quadriplegics
- Added research on cortical thickness and student income-level differences
- Clarified the definition of dendrite
- Redefined terminal button
- Clarified the process of neurotransmission
- Redefined neurotransmitter
- Added a new definition of reuptake
- Clarified the acetylcholine description
- Clarified the description of motor neurons
- Clarified transcranial magnetic stimulation
- Clarified reticular formation
- Added a new definition of neuroplasticity
- Reorganized the description of lateralization of hemispheres of brain
- Added information on brain-computer interface

Chapter 4–Sensation and Perception

- Clarified the description of light waves
- Clarified information on feature detection and specialization of receptors of visual information
- Clarified afterimage implications for trichromatic theory
- Clarified the place theory of hearing
- Clarified auditory neurons specialization
- Defined reflex sympathetic dystrophy syndrome
- Clarified gate-control theory
- Clarified biofeedback as a means to control pain
- Clarified synesthesia
- Redefined motion parallax
- Updated information on cognitive factors in pain perception
- Added a feature on the use of dogs' sensory capabilities for detection
- Enhanced the discussion of echolocation
- Updated statistics on chronic pain
- Introduced new synesthesia cases
- Introduced new information on inner speech and daydreaming

Chapter 5–States of Consciousness

- Included information on the opioid epidemic
- Added a new figure for sleep needs by age
- Discussed reverse learning and synaptic pruning as functions of sleep
- Clarified the definition of nightmares
- Added information on the frequency of nightmares
- Changed the stages of sleep from four to three, reflecting the American Academy of Sleep Medicine change
- Clarified the experience of waking consciousness while daydreaming
- Clarified changes in electrical activity during hypnosis
- Clarified the controversy regarding the nature of hypnosis
- Clarified the use of hypnosis in pain relief
- Discussed long-term effects of meditation on heart disease
- Clarified psychologists' motivation for studying consciousness
- Added an example of opioid addict whose addiction started with Percocet
- Discussed reasons for the increase in deaths due to opioid overdoses
- Clarified the difference between opioids and opiates
- Clarified reasons why people seek out drug highs
- Discussed Adderall use by college students
- Added new figure on drug use
- Clarified information on the use of cocaine and crack
- Clarified the definition of hallucinogens
- Discussed the expanded legalization of marijuana
- Clarified MDMA use

Chapter 6–Learning

- Added a feature on the use of learning principles by Uber and Lyft
- Added a new prologue on training dogs for medical purposes

- Clarified the classical conditioning figure
- Clarified neutral stimulus
- Clarified the description of classical conditioning
- Clarified the stimulus generalization definition
- Redefined operant conditioning
- Redefined the schedule of reinforcement
- Clarified continuous and partial reinforcement schedules
- Redefined the variable-ratio schedule
- Clarified the results of exposure to media aggression
- Noted that behavior modification can help students study more effectively
- Added APA task force findings on violent video game play

Chapter 7–Memory

- Discussed highly superior autobiographical memory (HSAM)
- Added information on the meaning of memories
- Enhanced the discussion of false memories
- Clarified the sensory memory explanation
- Redefined chunk
- Clarified the explanation of chunk
- Redefined mnemonics
- Clarified the description of memory stores in working memory
- Clarified procedural memory
- Added the term *implicit memory*
- Clarified the description of engram
- Clarified the flashbulb memory description
- Clarified similarities and differences between cultures in memory
- Clarified relearning and the importance of practice
- Refined the description of keyword technique
- Explained the value of forgetting regarding relearning
- Explained conditions under which eyewitness memories are accurate

Chapter 8–Cognition and Language

- Added information on the value of video gaming for cognitive skills
- Discussed attention span declines
- Included a new definition of reasoning
- Redefined familiarity heuristic, with a new example
- Clarified how we represent problems to ourselves
- Added a new definition of means-ends analysis
- Added a new definition of insight and clarified the presentation
- Added new examples of enhancing insight in humans
- Clarified the definition of functional fixedness
- Removed the term "mental set"
- Redefined divergent thinking
- Redefined cognitive complexity
- Added a new definition of convergent thinking
- Redefined semantics
- Clarified telegraphic speech
- Clarified overgeneralization
- Added new contrary evidence to the nativist approach
- Clarified the definition of interactionist approaches to language development
- Discussed the idea that language fosters reasoning
- Clarified the linguistic-relativity hypothesis
- Added new statistics on multilingual students
- Discussed the relevance of cognitive bias to other areas, such as prejudice
- Discussed behavioral economics
- Introduced information on artificial intelligence and Siri and Alexa
- Noted changes in creativity with aging

Chapter 9–Intelligence

- Redefined fluid intelligence
- Redefined crystallized intelligence
- Clarified Alfred Binet's role
- Added a new definition of reliability
- Added a new definition of validity
- Added a new definition of familial intellectual disability
- Redefined intellectual disability
- Clarified full inclusion
- Clarified the virtues of the intellectually gifted
- Added a feature on acquired savant syndrome
- Added a new prologue about a young, gifted genius

Chapter 10–Motivation and Emotion

- Added a feature regarding research on the biggest losers' inability to maintain their weight loss
- Added a new prologue on excessive weight loss and social media
- Clarified Maslow's view of esteem
- Clarified the self-determination theory
- Added a new definition of need for achievement
- Clarified the James-Lange theory of emotions
- Clarified the Schachter-Singer theory of emotions
- Updated the description of the facial-affect program
- Discussed the increase in obesity across the globe
- Discussed the heritability of eating disorders
- Included research on functional differences in the orbitofrontal cortex involved in eating disorders

Chapter 11–Sexuality and Gender

- Added statistics on sexting
- Augmented the discussion of gender identity choices
- Added new gender identity labels
- Discussed gender identities on Facebook and in the media
- Clarified gender roles
- Included new figures on sexual harassment
- Clarified statistics on women's earnings compared to men's
- Added new figures on the earnings gap between women and men
- Included data on the relationship between the frequency of sex and relationship satisfaction
- Clarified beliefs about gender equality in the workplace
- Clarified differences in nonverbal behavior between men and women
- Clarified the nature of sex differences in cognitive abilities
- Clarified the nature of evolutionary arguments about gender differences
- Expanded the explanation of the biosocial explanation of gender differences
- Clarified the use of gay and lesbian labels
- Clarified the biological and genetic causes of sexual orientation
- Redefined transgender
- Clarified the distinction between transgender and intersex persons
- Clarified the information on anger as a cause of rape

- Added a new definition of delayed ejaculation disorder
- Clarified the female orgasmic disorder
- Enhanced the discussion of the benefits of sex for relationship satisfaction
- Included information on the experience of rape as cause of frontal cortex impairment
- Added statistics on female genital cutting victims in the United States

Chapter 12–Development

- Discussed the use of mitochondria in in vitro fertilization
- Clarified the vision capabilities of neonates
- Updated information on the changes in cognitive abilities over the life span
- Clarified the benefits of play
- Clarified Erikson's trust-versus-mistrust stage
- Clarified Erikson's autonomy-versus-shame-and-doubt stage
- Clarified Erikson's industry-versus-inferiority stage
- Clarified the information processing approach
- Clarified Vygotsky's view of cognitive development
- Changed the presentation of scaffolding
- Clarified the presentation of puberty
- Clarified the discussion of spermarche
- Clarified Kohlberg's Level 2 morality
- Clarified Kohlberg's Level 3 morality
- Clarified adolescence as a period of relative tranquility
- Redefined personal fables
- Clarified the discussion of culture-specific rites of passage
- Clarified emerging adulthood
- Redefined genetic programming theories of aging
- Updated statistics on Alzheimer's disease
- Added new research on slowing the declines of Alzheimer's disease
- Added new statistics on Facebook use by adolescents
- Enhanced the discussion of mental health issues for early puberty
- Discussed cyberbullying as a cause of suicide

Chapter 13–Personality

- Add a new prologue on the Lance Armstrong case
- Discussed the stability of personality across generations
- Redefined ego
- Clarified the discussion of ego's mediating role
- Clarified the discussion of Freud's Oedipal conflict in boys and girls
- Added specificity to the description of psychoanalytic theory
- Added a new definition of inferiority complex
- Redefined the Allport cardinal trait
- Redefined the Allport central trait
- Refined factor analysis
- Clarified criticisms of trait theory
- Clarified the distinction between psychodynamic, trait, and learning theories
- Clarified the relationship harmony concept
- Clarified temporary reductions in self-esteem
- Clarified research studies on twins separated early in life
- Clarified Rogers' notion of self-concept
- Replaced the term *norm* with *test norm*
- Added a new definition of test norm
- Added a new definition of projective test
- Clarified projective test criticisms

Chapter 14–Health Psychology: Stress, Coping, and Well-Being

- Added the concept of posttraumatic growth
- Added a feature on training physicians to convey bad news effectively
- Added data on Facebook as a source of negative health outcomes
- Updated medical error death statistics
- Discussed nontraditional forms of PTSD for combat veterans
- Discussed e-health communication
- Added statistics on electronic-cigarette use
- Added discussion on e-cigarette use and its effect on quitting traditional cigarette smoking
- Discussed the link between social relationships and health
- Clarified the biological and psychological consequences of stress
- Clarified the critique of general adaptation syndrome
- Clarified the effects of stress on lymphocytes
- Clarified techniques for coping with stress
- Included data on the incidence of smoking and disease among whites versus African Americans
- Clarified the social causes of smoking
- Discussed the relationship between poverty and sadness
- Added information on buying time savers versus buying goods and the relationship to happiness
- Added a new figure on smoking incidence

Chapter 15–Psychological Disorders

- Added a new case study of a woman with anxiety disorder
- Added references to magic and spells as explanations for abnormal behavior
- Add a feature on increases in self-reported psychological disorders
- Removed the explication of historical change in the DSM
- Discussed epigenetic approaches to schizophrenia
- Discussed the relationship between homelessness and psychological disorders
- Added new statistics on the mentally ill homeless population
- Clarified deviation from the typical definition of abnormality
- Clarified deviation from an ideal definition of abnormality
- Clarified the discussion of insanity
- Explicitly defined abnormal behavior
- Clarified the importance of the neurological basis of psychological disorders
- Clarified criticisms of psychoanalytic theory
- Added a new example of rationality of negative emotions regarding cognitive perspectives
- Clarified the discussion of the humanistic perspective
- Added a new definition of the sociocultural perspective
- Clarified the atheoretical, descriptive approach of the DSM
- Clarified the lack of objective danger in phobic stimuli
- Redefined compulsion
- Clarified the definition of illness anxiety disorder
- Clarified the discussion of dissociative identity disorder
- Redefined mood disorder
- Clarified the causes of gender differences in depression in women

- Clarified the label and explanation of internal unconscious conflicts as a cause of depression
- Changed "inappropriate emotional displays" to "inappropriate emotions" in the discussion of schizophrenia
- Added an explanation of the action of glutamate in treating schizophrenia
- Added material on the genes responsible for schizophrenia
- Discussed gray matter differences in the brains of people with schizophrenia
- Clarified and qualified the psychoanalytic explanations of schizophrenia
- Clarified the predispositional model of schizophrenia
- Clarified the lack of distress for those with personality disorders
- Clarified the explanation of borderline personality disorder
- Redefined neurocognitive disorders
- Clarified the statistics on the prevalence of psychological disorders
- Condensed and clarified the discussion of cross-cultural influences on definitions of abnormal behavior

Chapter 16–Treatment of Psychological Disorders

- Redefined psychotherapy
- Redefined biomedical therapy
- Reframed the discussion of psychodynamic therapies (versus psychoanalysis)
- Redefined psychoanalysis
- Clarified free association
- Redefined the behavioral approaches to therapy
- Clarified aversive therapy
- Revised the discussion of aversion therapy
- Clarified the definition of systematic desensitization
- Revised the discussion of contingency contracting
- Added a new definition of observational learning
- Reframed the discussion of behavioral techniques
- Expanded the definition of unconditional positive regard
- Clarified the discussion of contemporary versions of client-centered therapy
- Revised the discussion of interpersonal therapy effectiveness
- Revised the discussion of the goals of family therapy
- Clarified the definition of self-help therapy
- Clarified the discussion of the effectiveness of therapy in general versus specific kinds of therapy
- Added a new case study on use of deep brain stimulation
- Discussed the use of online therapy
- Reframed the distinction between biomedical approaches and other treatments
- Updated the definition of drug therapy
- Clarified the inhibition of neurotransmitter transmission
- Discussed virtual reality exposure therapy
- Added psychotherapy to the biomedical treatments for schizophrenia
- Added a discussion of brain scan neurofeedback for treatment
- Clarified the prefrontal lobotomy discussion
- Clarified the drawbacks to biomedical therapies
- Revised the definition of deinstitutionalization
- Added material on drug treatments that is more explicitly linked to the neuroscience chapter
- Discussed cognitive appraisal retraining on academic tasks
- Added information on memory deficits as side effect of antidepressant drugs
- Referenced Satir's family therapy work

Chapter 17–Social Psychology

- Added a new prologue on Dylann Roof in South Carolina
- Discussed mentoring approaches to reducing self-stereotyping
- Clarified the description of the warm-cold person perception experiment
- Clarified the example of fundamental attribution error
- Redefined norms
- Clarified the description of the foot-in-the-door technique
- Clarified the door-in-the-face technique
- Clarified the effect of proximity on liking
- Clarified the mere exposure effect
- Clarified the effect of similarity on liking
- Clarified the relationship between physical attractiveness and a general attraction
- Clarified frustration-aggression approaches
- Clarified diffusion of responsibility explanations of helping
- Added information on global warming and aggression
- Added research on microaggressions

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INSTRUCTOR SUPPLEMENTS

Instructor's Manual The instructor's manual provides a wide variety of tools and resources for presenting the course, including learning objectives and ideas for lectures and discussions.

Test Bank By increasing the rigor of the test bank development process, McGraw-Hill Education has raised the bar for student assessment. A coordinated team of subject-matter experts methodically vetted each question and set of possible answers for accuracy, clarity, effectiveness, and accessibility; each question has been annotated for level of difficulty, Bloom's taxonomy, APA learning outcomes, and corresponding coverage in the text. Organized by chapter, the questions are designed to test factual, conceptual, and applied understanding. All test questions are available within TestGen™ software and as Word documents.

PowerPoint Presentations The PowerPoint presentations, available in both dynamic, lecture-ready and accessible, WCAG-compliant versions, highlight the key points of the chapter and include supporting visuals. All of the slides can be modified to meet individual needs.

Image Gallery The Image Gallery features the complete set of downloadable figures and tables from the text. These can be easily embedded by instructors into their own PowerPoint slides.

Acknowledgments

One of the central features of *Understanding Psychology* is the involvement of professionals as well as students in the review process. The 14th edition of *Understanding*

Psychology has relied heavily–and benefited substantially–from the advice of instructors and students from a wide range of backgrounds.

Many teachers along my educational path have shaped my thinking. I was introduced to psychology at Wesleyan University, where several committed and inspiring teachers–and in particular, Karl Scheibe–conveyed their sense of excitement about the field and made its relevance clear to me. Karl epitomizes the teacher-scholar combination to which I aspire, and I continue to marvel at my good fortune in having such a role model.

By the time I left Wesleyan, I could envision no other career but that of psychologist. Although the nature of the University of Wisconsin, where I did my graduate work, could not have been more different from the much smaller Wesleyan, the excitement and inspiration were similar. Again, a cadre of excellent teachers–led, especially, by the late Vernon Allen–molded my thinking and taught me to appreciate the beauty and science of the discipline of psychology.

My colleagues and students at the University of Massachusetts Amherst provide ongoing intellectual stimulation, and I thank them for making the university a fine place to work. Several people also provided extraordinary research and editorial help. In particular, I am especially grateful to my superb students, past and present, including Erik Coats, Ben Happ, Sara Levine, Chris Poirier, Jim Tyler, and Matt Zimbler. John Bickford, in particular, provided invaluable editorial input that has enhanced the content considerably. Finally, I am grateful to John Graiff and Michelle Goncalves, whose hard work and dedication helped immeasurably on just about everything involving this material.

I am also grateful to Erika Nyhus of Bowdoin College, who provided exceptional support in helping identify appropriate neuroscientific research to include in the *Neuroscience in Your Life* features. I thank her for her fine work.

I offer great thanks to the McGraw-Hill Education editorial and marketing teams that participated in this new edition. Vice President and General Manager Mike Ryan and Senior Portfolio Manager Nancy Welcher foster a creative, energetic, and environment. I am in awe of their enthusiasm, commitment, and never-ending good ideas. I also thank my award-winning Marketing Managers AJ Laferrera and Ann Helgerson for their enthusiasm and commitment to this project and for being so great to work with. I'm also happy that the indefatigable, inventive Cory Reeves provided input about all sorts of things, and I especially thank him for his mentorship in the realm of all things musical. I thank these folks not only for their superb professionalism, but also for their friendship.

I am very grateful to Susan Messer, product developer on this edition. Susan did a superb job of managing a myriad of details (as well as me), bringing motivation, intelligence, and a fine literary sense to the project. Finally, every reader of this book owes a debt to Rhona Robbin and Judith Kromm, developmental editors on earlier editions of *Understanding Psychology*. Their relentless pursuit of excellence helped form the essence of this book, and they taught me a great deal about the craft and art of writing. Central to the design, production, and marketing process were Program Manager Debra Hash, Text Content Licensing Specialist Melisa Seegmiller, Image Content Licensing Specialist Shawntel Schmitt, and Designer David Hash, as well as Marilynn Taylor and Mary Powers, key members of the production group. I am proud to be a part of this world-class McGraw-Hill team.

Finally, I remain completely indebted to my family. My parents, Leah Brochstein and Saul Feldman, provided a lifetime foundation of love and support, and I continue to see their influence in every corner of my life. My extended family also plays a central role in my life. They include, more or less in order of age, my nieces and nephews, my terrific brother, my brothers- and sisters-in-law, and the late Ethel Radler. My mother-in-law, the late Mary Evans Vorwerk, had an important influence on this book, and I remain ever grateful to her.

Ultimately, my children, Jonathan, Joshua, and Sarah; my daughters-in-law Leigh and Julie; my son-in-law Jeffrey; my grandsons Alex and Miles; my granddaughters Naomi and Lilia; and my wife, Katherine, remain the focal points of my life. I thank them, with immense love, and thank my lucky stars that they are in my life.

Robert S. Feldman
Amherst, Massachusetts

Making the Grade: A Practical Guide to Smarter Studying

No matter why you are taking introductory psychology, it's a safe bet you're interested in maximizing your understanding of the material and getting a good grade. And you want to accomplish these goals as quickly and efficiently as possible.

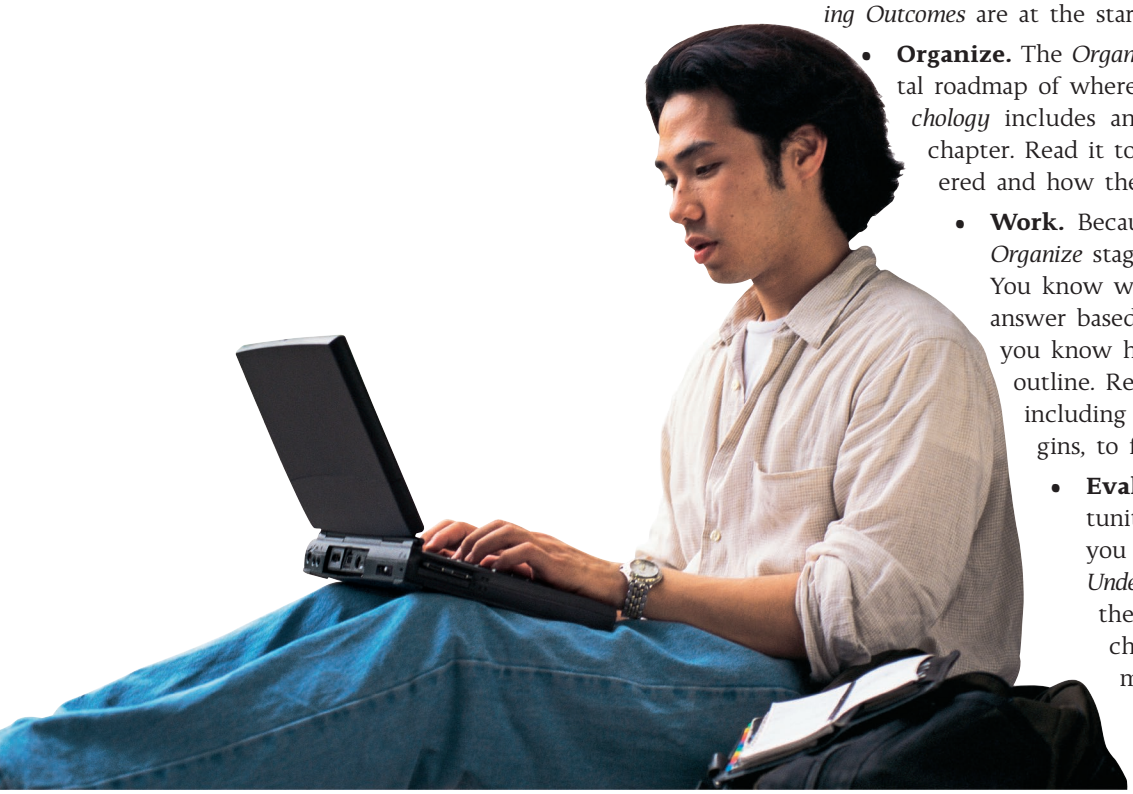
Good news: Several subfields of psychology have identified different ways to help you learn and remember material you will study throughout college. Here's my guarantee to you: If you learn and follow the guidelines in each of these areas, you'll become a better student and get better grades. Always remember that *good students are made, not born.*

Adopt a General Study Strategy: Using the Power Framework

Psychologists have devised several excellent techniques to improve study skills. One of the best, based on a substantial body of research, is "P.O.W.E.R." or *P*repare, *O*rganize, *W*ork, *E*valuate, and *R*ethink

P.O.W.E.R. system entails the following steps:

- **Prepare.** In *Understanding Psychology,* 14th Edition, read the broad questions called *Learning Outcomes* to *Prepare* yourself for the material that follows. *Learning Outcomes* are at the start of each chapter and each module.
- **Organize.** The *Organize* stage involves developing a mental roadmap of where you are headed. *Understanding Psychology* includes an outline at the beginning of each chapter. Read it to get an idea of what topics are covered and how they are organized.
- **Work.** Because of your effort in the *Power* and *Organize* stages, the *Work* stage will be easier. You know what questions the material will answer based on the *Learning Outcomes,* and you know how it is organized based on the outline. Read everything in the content, including the material in boxes and the margins, to fully understand the material.
- **Evaluate.** *Evaluate* provides the opportunity to determine how effectively you have mastered the material. In *Understanding Psychology,* questions at the end of each module offer a rapid check of your understanding of the material. *Evaluate* your progress to assess your degree of mastery.
- **Rethink.** This final stage, *Rethink,* entails reanalyzing, reviewing, questioning, and



challenging assumptions. Rethinking allows you to consider how the material fits with other information you have already learned. Every major section of *Understanding Psychology* ends with a *Rethink* section. Answering its thought-provoking questions will help you think about the material at a deeper level.

Using the P.O.W.E.R. framework will help you maximize the efficiency and effectiveness of your study. In addition, the P.O.W.E.R. framework can be applied beyond the classroom, helping you to achieve success in your career and life.

Manage Your Time

Managing your time as you study is a central aspect of academic success. But remember: The goal of time management is to permit us to make informed choices about how we use our time. Use these time management procedures to harness time for your own advantage.

SET YOUR PRIORITIES. First, determine your priorities. *Priorities* are the tasks and activities you need and want to do, rank-ordered from most important to least important.

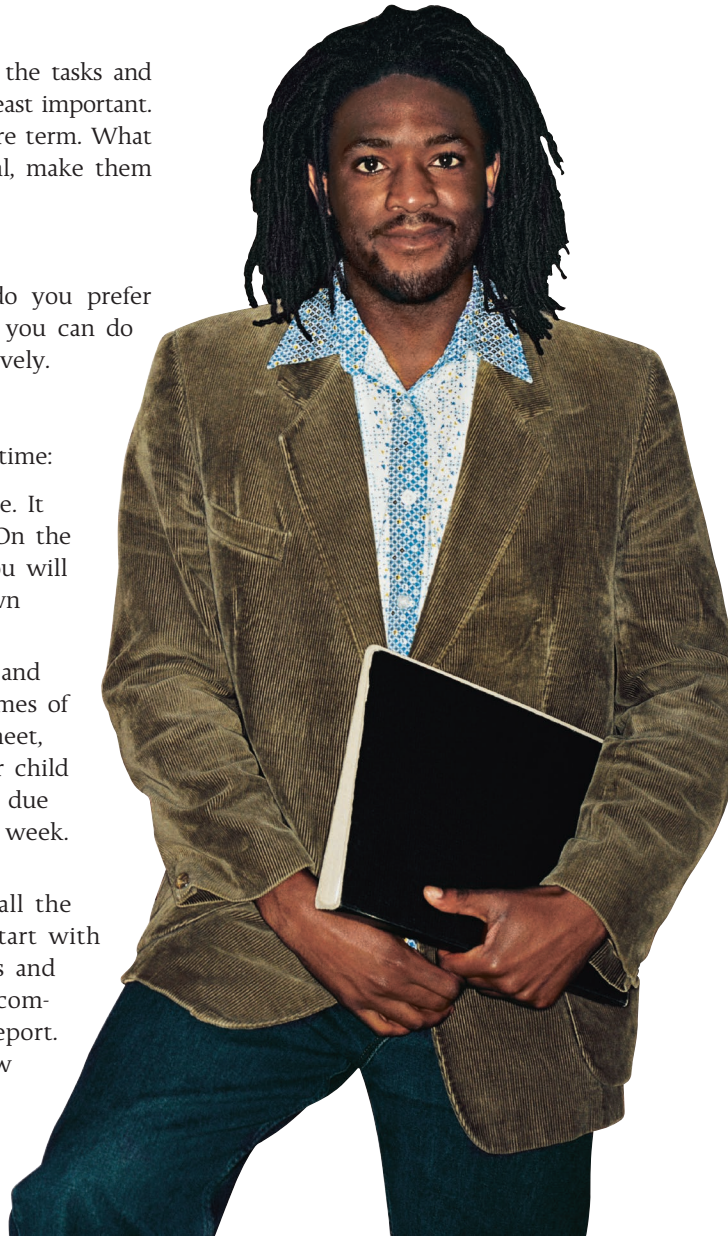
The best procedure is to start off by identifying priorities for an entire term. What do you need to accomplish? Rather than making these goals too general, make them specific, such as, "studying 10 hours before each chemistry exam."

IDENTIFY YOUR PRIME TIME. Are you a morning person or do you prefer studying later at night? Being aware of the time or times of day when you can do your best work will help you plan and schedule your time most effectively.

MASTER THE MOMENT. Here's what you'll need to organize your time:

- *A master calendar* that shows all the weeks of the term on one page. It should include every week of the term and seven days per week. On the master calendar, note the due date of every assignment and test you will have. Also include important activities from your personal life, drawn from your list of priorities. Add some free time for yourself.
- *A weekly timetable* that shows the days of the week across the top and the hours, from 6:00 a.m. to midnight, along the side. Fill in the times of all your fixed, prescheduled activities–the times that your classes meet, when you have to be at work, the times you have to pick up your child at day care, and any other recurring appointments. Add assignment due dates, tests, and any other activities on the appropriate days of the week. Then add blocks of time necessary to prepare for those events.
- *A daily to-do list* using a small calendar or your smartphone. List all the things that you intend to do during the day and their priority. Start with the things you *must* do and that have fixed times, such as classes and work schedules. Then add in the other things that you *should* accomplish, such as researching an upcoming paper or finishing a lab report. Finally, list things that are a low priority, such as taking in a new movie.

CONTROL YOUR TIME. If you follow the schedules that you've prepared, you've taken the most important steps in time management. Things, however, always seem to take longer than planned.



When inevitable surprises occur, there are several ways to take control of your days to follow your intended schedule:

- **Say no.** You don't have to agree to every favor that others ask of you.
- **Get away from it all.** Adopt a specific spot to call your own, such as a corner desk in a secluded nook in the library. If you use it enough, your body and mind will automatically get into study mode as soon as you get there.
- **Enjoy the sounds of silence.** Studies suggest that we are able to concentrate most when our environment is silent. Experiment and work in silence for a few days. You may find that you get more done in less time than you would in a more distracting environment.
- **Take an e-break.** Take an e-break and shut down your communication sources for some period of time. Phone calls, text messages, IMs, and e-mail can be saved on a phone or computer. They'll wait.
- **Expect the unexpected.** You'll never be able to escape from unexpected interruptions and surprises that require your attention. But by trying to anticipate them and thinking about how you'll react to them, you can position yourself to react effectively when they do occur.

Take Good Notes in Class

Let's consider some of the basic principles of notetaking:

- **Identify the instructor's–and your–goals for the course.** The information you get during the first day of class and through the syllabus is critical. In addition to the instructor's goals, you should have your own. How will the information from the course help you to enhance your knowledge, improve yourself as a person, achieve your goals?
- **Complete assignments before coming to class.**
- **Listen for the key ideas.** Listen for such phrases as "you need to know . . . ," "the most important thing to consider . . . ," "there are four problems with this approach . . . ," and–a big one–"this will be on the test . . . "; phrases like these should cause you to sit up and take notice. Also, if an instructor says the same thing in several ways, the material being discussed is important.
- **Use short, abbreviated phrases–not full sentences–when taking notes.**
- **Pay attention to PowerPoint slides or what is displayed in class on overhead projectors, whiteboards, or chalk boards. Remember these tips:**
  - Listening is more important than seeing.
  - Don't copy everything that is on every slide.
  - Remember that key points on slides are . . . key points.
  - Check to see if the presentation slides are available online.
  - Remember that presentation slides are not the same as good notes for a class.

Memorize Efficiently

Here's a key principle of effective memorization: Memorize what you need to memorize. *Forget about the rest.*

You have your choice of dozens of techniques of memorization. Also, feel free to devise your own strategies or add those that have worked for you in the past.

REHEARSAL. Say it aloud: rehearsal. Think of this word in terms of its three syllables: re–hear–sal. If you're scratching your head about why you should do this, it's to illustrate the point of *rehearsal:* to transfer material that you encounter into long-term memory.

MNEMONICS. This odd word (pronounced with the "m" silent–"neh MON ix") describes formal techniques used to make material more readily remembered.

Among the most common mnemonics are the following:

- **Acronyms.** *Acronyms* are words or phrases formed by the first letters of a series of terms.

  For example, Roy G. Biv helps people to remember the colors of the spectrum (red, orange, yellow, green, blue, indigo, and violet).
- **Acrostics.** *Acrostics* are sentences in which the first letters spell out something that needs to be recalled. The benefits of acrostics are similar to those of acronyms.
- **Rhymes and jingles.** "Thirty days hath September, April, June, and November." If you know the rest of the rhyme, you're familiar with one of the most commonly used mnemonic jingles in the English language.

USE OF MULTIPLE SENSES. Every time we encounter new information, all of our senses are potentially at work. Each piece of sensory information is stored in a separate location in the brain, and yet all the pieces are linked in extraordinarily intricate ways.

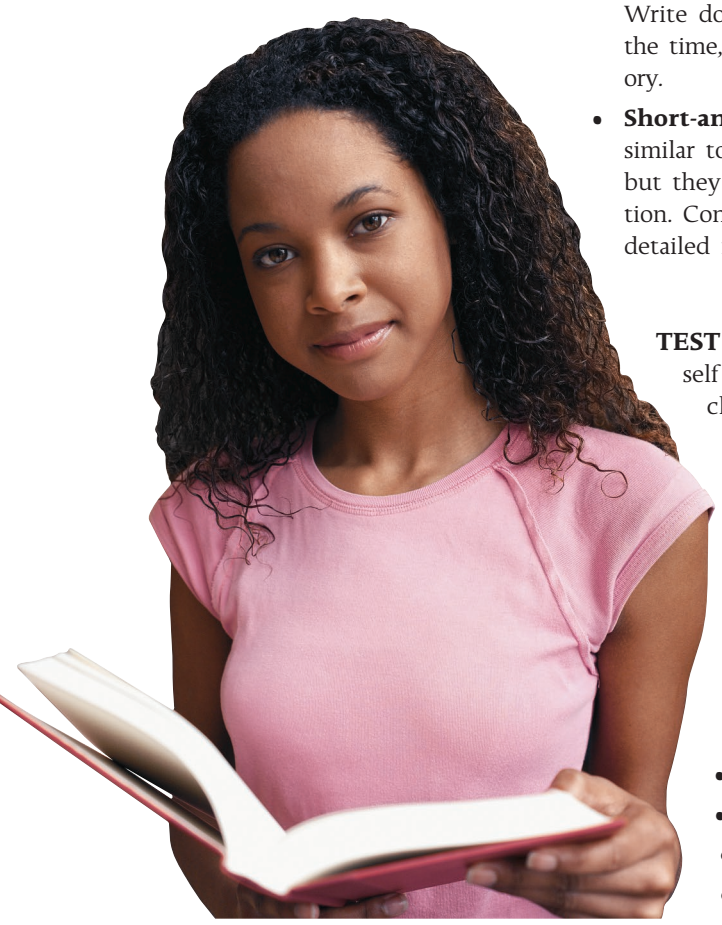
- **When you learn something, use your body.** Move around. Stand up; sit down. Touch the page. Trace figures with your fingers. Talk to yourself. Think out loud. By involving every part of your body, you've increased the number of potential ways to trigger a relevant memory later, when you need to recall it.
- **Draw and diagram the material.** Structuring written material by graphically grouping and connecting key ideas and themes is a powerful technique. Creating drawings, sketches, and even cartoons can help us remember better.
- **Visualize.** Visualization is effective because it helps make abstract ideas concrete; it engages multiple senses; it permits us to link different bits of information together; and it provides us with a context for storing information.
- **Overlearning.** *Overlearning* consists of studying and rehearsing material past the point of initial mastery. Through overlearning, you can recall the information without even thinking about it.

Study for Tests Strategically

Here are some guidelines that can help you do your best on tests:

KNOW WHAT YOU ARE PREPARING FOR. To find out about an upcoming test, ask if it is a "test," an "exam," a "quiz," or something else. These names imply different things. In addition, each kind of test question requires a somewhat different style of preparation.

- **Essay questions.** The best approach to studying for an essay test involves four steps:
  1. Reread your class notes and any notes you've made on assigned readings that will be covered on the upcoming exam. Also go through the readings themselves, reviewing underlined or highlighted material and marginal notes.
  2. Think of likely exam questions. Some instructors give lists of possible essay topics; if yours does, focus on this list and think of other possibilities.
  3. Answer each potential essay question–aloud. You can also write down the main points that any answer should cover.
  4. After you've answered the questions, look at the notes and readings again. If you feel confident that you've answered specific questions adequately, check them off. If you had trouble with some questions, review that material immediately. Then repeat step 3, answering the questions again.
- **Multiple-choice, true-false, and matching questions.** Studying for multiple-choice, true-false, and matching questions requires attention to the details. Write down important facts on index cards: They're portable and available all the time, and the act of creating them helps drive the material into your memory.
- **Short-answer and fill-in questions.** Short-answer and fill-in questions are similar to essays in that they require you to recall key pieces of information, but they don't demand that you integrate or compare different types of information. Consequently, the focus of your study should be on the recall of specific, detailed information.



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TEST YOURSELF. When you believe you've mastered the material, test yourself on it. You can create a test for yourself, in writing, making its form as close as possible to what you expect the actual test to be.

DEAL WITH TEST ANXIETY. What does the anticipation of a test do to you? *Test anxiety* is a temporary condition characterized by fears and concerns about test-taking. You'll never eliminate test anxiety completely, nor do you want to. A little bit of nervousness can energize us, making us more attentive and vigilant.

On the other hand, for some students, anxiety can spiral into the kind of paralyzing fear that makes their minds go blank. There are several ways to keep this from happening to you:

- *Prepare thoroughly.*
- *Take a realistic view of the test.*
- *Learn relaxation techniques.*
- *Visualize success.*

FORM A STUDY GROUP. *Study groups* can be extremely powerful tools because they help accomplish several things:

- They help members organize and structure the material to approach their studying in a systematic and logical way.
- They allow students to share different perspectives on the material.
- They make it more likely that students will not overlook any potentially important information.
- They force members to rethink the course material, explaining it in words that other group members will understand. This helps both understanding and recall of the information when it is needed on the test.
- Finally, they help motivate members to do their best. When you're part of a study group, you're no longer working just for yourself; your studying also benefits the other study group members. Not wanting to let down your classmates in a study group may encourage you to put in your best effort.

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CHAPTER 1
Introduction to Psychology

LEARNING OUTCOMES FOR CHAPTER 1

MODULE 1

LO 1-1 What is the science of psychology?

LO 1-2 What are the major specialties in the field of psychology?

LO 1-3 Where do psychologists work?

PSYCHOLOGISTS AT WORK

The Subfields of Psychology: Psychology's Family Tree

Working at Psychology

MODULE 2

LO 2-1 What are the origins of psychology?

LO 2-2 What are the major approaches in contemporary psychology?

A SCIENCE EVOLVES: THE PAST, THE PRESENT, AND THE FUTURE

The Roots of Psychology

Today's Five Major Perspectives

Applying Psychology in the 21st Century: Psychology Matters

MODULE 3

LO 3-1 What are psychology's key issues and controversies?

LO 3-2 What is the future of psychology likely to hold?

PSYCHOLOGY'S KEY ISSUES AND CONTROVERSIES

Exploring Diversity: Understanding How Culture, Ethnicity, and Race Influence Behavior

Psychology's Future

Neuroscience in Your Life: Enhancing Your Mind

Becoming an Informed Consumer of Psychology: Thinking Critically About Psychology: Distinguishing Legitimate Psychology from Pseudo-Psychology

PROLOGUE *HIGH SCHOOL MASSACRE*

It started like any other school day on a balmy Wednesday at the Marjory Stoneman Douglas High School campus in Parkland, Florida. But it ended with one of the most horrific school shootings in U.S. history. By the time the shooter, 19-year-old Nikolas Cruz, finished walking the halls with a blazing AR-15 rifle, 17 students and teachers lay dead, and many others were wounded.

But in the midst of this carnage, the best of humanity was also on display. Teachers and staff put their own lives at risk in an effort to shield and protect their students, in some cases dying as a result. And despite the danger, first responders rushed to help the wounded, and many students sought to comfort and aid their wounded classmates. As people all around the world expressed their grief, many joined together to work toward legal change that would make such shootings less likely.

Mourning the deaths of 17 individuals following the shooting at Marjory Stoneman Douglas High School in Florida.

LOOKING *Ahead*

The Florida school massacre gives rise to a host of important psychological issues. For example, consider these questions asked by psychologists following the catastrophe:

- What motivated the shooter's rampage? Was he driven by political, social, or religious beliefs, or was he psychologically disturbed?
- What internal, biologically based changes occurred in those fleeing for their lives from the shooter?
- What memories did people have of the massacre afterward? How accurate were they?
- What will be the long-term effects of the massacre on the psychological and physical health of the survivors and witnesses?
- What are the most effective ways to help people cope with the sudden and unexpected loss of friends and loved ones?
- Could this tragedy have been prevented if the shooter had received psychological treatment?

As you'll soon see, the field of psychology addresses questions like these—and many, many more. In this chapter, we begin our examination of psychology, the different types of psychologists, and the various roles that psychologists play.

Module 1
Psychologists at Work

Psychology is the scientific study of behavior and mental processes. The simplicity of this definition is in some ways deceiving, concealing ongoing debates about how broad the scope of psychology should be. Should psychologists limit themselves to the study of outward, observable behavior? Is it possible to scientifically study thinking? Should the field encompass the study of such diverse topics as physical and mental health, perception, dreaming, and motivation? Is it appropriate to focus solely on human behavior, or should the behavior of other species be included?

Most psychologists would argue that the field should be receptive to a variety of viewpoints and approaches. Consequently, the phrase *behavior and mental processes* in the definition of psychology must be understood to mean many things: It encompasses not just what people do but also their thoughts, emotions, perceptions, reasoning processes, memories, and even the biological activities that maintain bodily functioning.

Psychologists try to describe, predict, and explain human behavior and mental processes, as well as help to change and improve the lives of people and the world in which they live. They use scientific methods to find answers that are far more valid and legitimate than those resulting from intuition and speculation, which are often inaccurate (see Figure 1; Ferguson, 2015).

LEARNING OUTCOMES

LO 1-1 What is the science of psychology?

LO 1-2 What are the major specialties in the field of psychology?

LO 1-3 Where do psychologists work?

psychology The scientific study of behavior and mental processes. (Module 1)

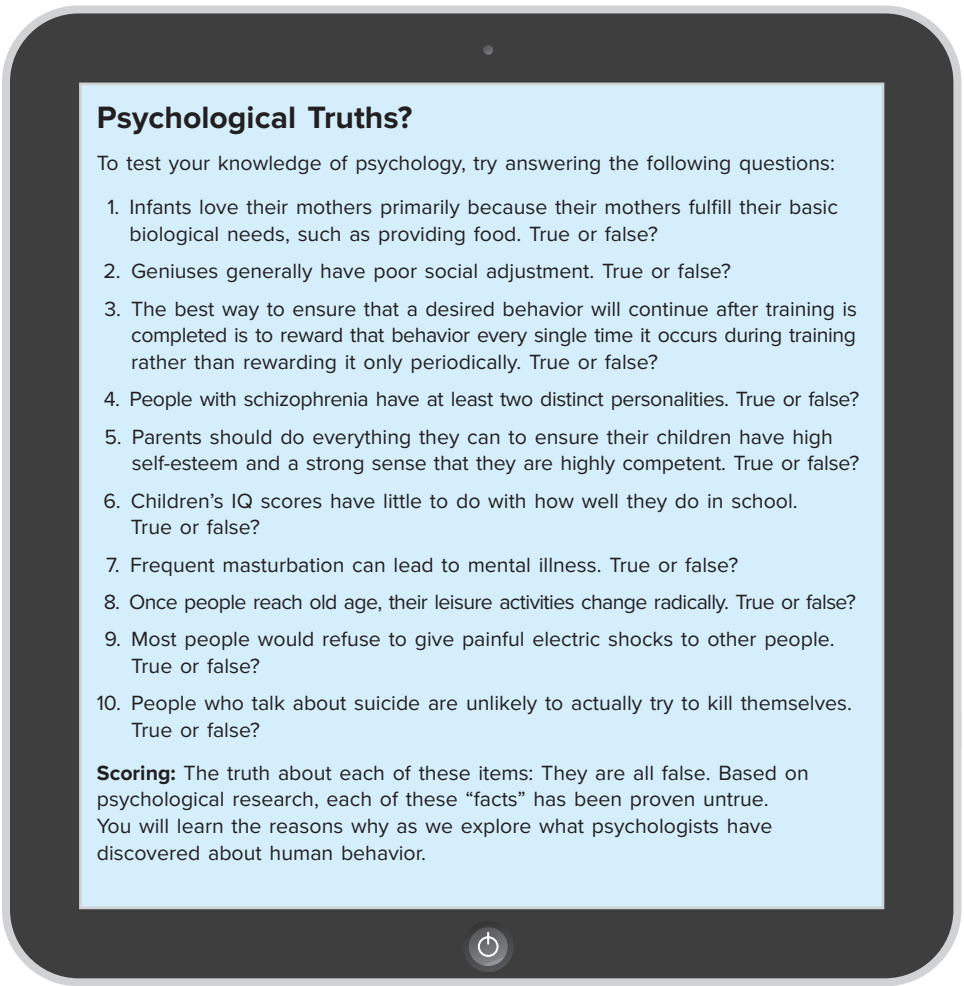

FIGURE 1 The scientific method is the basis of all psychological research and is used to find valid answers. Test your knowledge of psychology by answering these questions.

Source: Adapted from Lamal, P. A. (1979). College students' common beliefs about psychology. Teaching of Psychology, 6, 155–158.

The Subfields of Psychology: Psychology's Family Tree

As the study of psychology has grown, it has given rise to a number of subfields (described in Figure 2). The subfields of psychology can be likened to an extended family, with assorted nieces and nephews, aunts and uncles, and cousins who, although they may not interact on a day-to-day basis, are related to one another because they share a common goal: understanding behavior. One way to identify the key subfields is to look at some of the basic questions about behavior that they address.

WHAT ARE THE BIOLOGICAL FOUNDATIONS OF BEHAVIOR?

Study Alert
The different subfields of psychology allow psychologists to explain the same behavior in multiple ways. Review Figure 2 for a summary of the subfields.

In the most fundamental sense, people are biological organisms. *Behavioral neuroscience* is the subfield of psychology that focuses on the ways in which the brain, the nervous system, and the other biological aspects of the body determine behavior.

Thus, neuroscientists consider how our body influences our behavior. For example, they may examine the link between specific sites in the brain and the muscular tremors of people affected by Parkinson's disease or attempt to determine how our emotions are related to physical sensations.

HOW DO PEOPLE SENSE, PERCEIVE, LEARN, AND THINK ABOUT THE WORLD?

PsychTech
It's now common knowledge that we cannot safely text and drive at the same time. This awareness came from the work of cognitive psychologists, who demonstrated that it is impossible to do both without a serious and potentially deadly decline in driving ability.

If you have ever wondered why you are susceptible to optical illusions, how your body registers pain, or how to make the most of your study time, an experimental psychologist can answer your questions. *Experimental psychology* is the branch of psychology that studies the processes of sensing, perceiving, learning, and thinking about the world. (The term *experimental psychologist* is somewhat misleading: Psychologists in every specialty area use experimental techniques.)

Several subspecialties of experimental psychology have become specialties in their own right. One is *cognitive psychology*, which focuses on higher mental processes, including thinking, memory, reasoning, problem solving, judging, decision making, and language.

WHAT ARE THE SOURCES OF CHANGE AND STABILITY IN BEHAVIOR ACROSS THE LIFE SPAN?

A baby producing her first smile . . . taking his first step . . . saying her first word. These universal milestones in development are also singularly special and unique for each person. *Developmental psychology* studies how people grow and change from the moment of conception through death. *Personality psychology* focuses on the consistency in people's behavior over time and the traits that differentiate one person from another.

HOW DO PSYCHOLOGICAL FACTORS AFFECT PHYSICAL AND MENTAL HEALTH?

Frequent depression, stress, and fears that prevent people from carrying out their normal activities are topics that interest a health psychologist, a clinical psychologist, and a counseling psychologist. *Health psychology* explores the relationship between psychological factors and physical ailments or disease. For example, health psychologists are interested in assessing how long-term stress (a psychological factor) can affect physical health and in identifying ways to promote behavior that brings about good health (Yardley & Moss-Morris, 2009; Proyer et al., 2013; Sauter & Hurrell, 2017).

Subfield	Description
Behavioral genetics	*Behavioral genetics* studies the inheritance of traits related to behavior.
Behavioral neuroscience	*Behavioral neuroscience* examines the biological basis of behavior.
Clinical psychology	*Clinical psychology* deals with the study, diagnosis, and treatment of psychological disorders.
Clinical neuropsychology	*Clinical neuropsychology* unites the areas of biopsychology and clinical psychology, focusing on the relationship between biological factors and psychological disorders.
Cognitive psychology	*Cognitive psychology* focuses on the study of higher mental processes.
Counseling psychology	*Counseling psychology* focuses primarily on educational, social, and career adjustment problems.
Cross-cultural psychology	*Cross-cultural psychology* investigates the similarities and differences in psychological functioning in and across various cultures and ethnic groups.
Developmental psychology	*Developmental psychology* examines how people grow and change from the moment of conception through death.
Educational psychology	*Educational psychology* is concerned with teaching and learning processes, such as the relationship between motivation and school performance.
Environmental psychology	*Environmental psychology* considers the relationship between people and their physical environment.
Evolutionary psychology	*Evolutionary psychology* considers how behavior is influenced by our genetic inheritance from our ancestors.
Experimental psychology	*Experimental psychology* studies the processes of sensing, perceiving, learning, and thinking about the world.
Forensic psychology	*Forensic psychology* focuses on legal issues, such as determining the accuracy of witness memories.
Health psychology	*Health psychology* explores the relationship between psychological factors and physical ailments or disease.
Industrial/organizational psychology	*Industrial/organizational* psychology is concerned with the psychology of the workplace.
Personality psychology	*Personality psychology* focuses on the consistency in people's behavior over time and the traits that differentiate one person from another.
Program evaluation	*Program evaluation* focuses on assessing large-scale programs, such as the Head Start preschool program, to determine whether they are effective in meeting their goals.
Psychology of women	*Psychology* of women focuses on issues such as discrimination against women and the causes of violence against women.
School psychology	*School psychology* is devoted to counseling children in elementary and secondary schools who have academic or emotional problems.
Social psychology	*Social psychology* is the study of how people's thoughts, feelings, and actions are affected by others.
Sport psychology	*Sport psychology* applies psychology to athletic activity and exercise.

FIGURE 2 The major subfields of psychology.

(Top): ©Spencer Grant/Science Source; (Middle): ©Monkey Business Images/Shutterstock; (Bottom): ©Don Hammond/DesignPics

Clinical psychology deals with the study, diagnosis, and treatment of psychological disorders. Clinical psychologists are trained to diagnose and treat problems that range from the crises of everyday life, such as unhappiness over the breakup of a relationship, to more extreme conditions, such as profound, lingering depression. Some clinical psychologists also research and investigate issues that vary from identifying the early signs of psychological disturbance to studying the relationship between family communication patterns and psychological disorders.

Like clinical psychologists, counseling psychologists deal with people's psychological problems, but the problems they deal with are more specific. *Counseling psychology* focuses primarily on educational, social, and career adjustment problems. Almost every college has a center staffed with counseling psychologists. This is where students can get advice on the kinds of jobs they might be best suited for, on methods of studying effectively, and on strategies for resolving everyday difficulties, such as problems with roommates and concerns about a specific professor's grading practices. Many large business organizations also employ counseling psychologists to help employees with work-related problems.

HOW DO OUR SOCIAL NETWORKS AFFECT BEHAVIOR?

Our complex networks of social interrelationships are the focus for many subfields of psychology. For example, *social psychology* is the study of how people's thoughts, feelings, and actions are affected by others. Social psychologists concentrate on such diverse topics as human aggression, liking and loving, persuasion, and conformity.

Cross-cultural psychology investigates the similarities and differences in psychological functioning in and across various cultures and ethnic groups. For example, cross-cultural psychologists examine how cultures differ in their use of punishment during child-rearing.

EXPANDING PSYCHOLOGY'S FRONTIERS

The boundaries of the science of psychology are constantly growing. Three newer members of the field's family tree–evolutionary psychology, behavioral genetics, and clinical neuropsychology–have sparked particular excitement, and debate, within psychology.

Evolutionary Psychology

Evolutionary psychology considers how behavior is influenced by our genetic inheritance from our ancestors. The evolutionary approach suggests that the chemical coding of information in our cells not only determines traits such as hair color and race but also holds the key to understanding a broad variety of behaviors that helped our ancestors survive and reproduce.

Evolutionary psychology stems from Charles Darwin's arguments in his groundbreaking 1859 book, *On the Origin of Species*. Darwin suggested that a process of natural selection leads to the survival of the fittest and the development of traits that enable a species to adapt to its environment.

Evolutionary psychologists take Darwin's arguments a step further. They argue that our genetic inheritance determines not only physical traits such as skin and eye color but certain personality traits and social behaviors as well. For example, evolutionary psychologists suggest that behavior such as shyness, jealousy, and cross-cultural similarities in qualities desired in potential mates are at least partially determined by genetics, presumably because such behavior helped increase the survival rate of humans' ancient relatives (Sefcek, Brumbach, & Vasquez, 2007; Fost, 2015; Lewis et al., 2017).

Although they are increasingly popular, evolutionary explanations of behavior have stirred controversy. By suggesting that many significant behaviors unfold automatically because they are wired into the human species, evolutionary approaches minimize the role of environmental and social forces. Still, the evolutionary approach has stimulated a significant amount of research on how our biological inheritance influences our traits and behaviors (Buss, 2004; Mesoudi, 2011; Flannelly, 2017).

Behavioral Genetics Another rapidly growing area in psychology focuses on the biological mechanisms, such as genes and chromosomes, that enable inherited behavior to unfold. *Behavioral genetics* seeks to understand how we might inherit certain behavioral traits and how the environment influences whether we actually display such traits (Vukasović & Bratko, 2015; Krüger, Korsten, & Hoffman, 2017).

Clinical Neuropsychology *Clinical neuropsychology* unites the areas of neuroscience and clinical psychology: It focuses on the origin of psychological disorders in biological factors. Building on advances in our understanding of the structure and chemistry of the brain, this specialty has already led to promising new treatments for psychological disorders as well as debates over the use of medication to control behavior (Boake, 2008; Holtz, 2011; Craig, 2017).

Working at Psychology

Help Wanted: Assistant professor at a small liberal arts college. Teach undergraduate courses in introductory psychology and courses in specialty areas of cognitive psychology, perception, and learning. Strong commitment to quality teaching as well as evidence of scholarship and research productivity necessary.

Help Wanted: Industrial-organizational consulting psychologist. International firm seeks psychologists for full-time career positions as consultants to management. Candidates must have the ability to establish a rapport with senior business executives and help them find innovative and practical solutions to problems concerning people and organizations.

Help Wanted: Clinical psychologist. PhD, internship experience, and license required. Comprehensive clinic seeks psychologist to work with children and adults providing individual and group therapy, psychological evaluations, crisis intervention, and development of behavior treatment plans on multidisciplinary team.

As these job ads suggest, psychologists are employed in a variety of settings. Many doctoral-level psychologists are employed by institutions of higher learning (universities and colleges) or are self-employed, usually working as private practitioners treating clients (see Figure 3). Other work sites include hospitals, clinics, mental health centers,

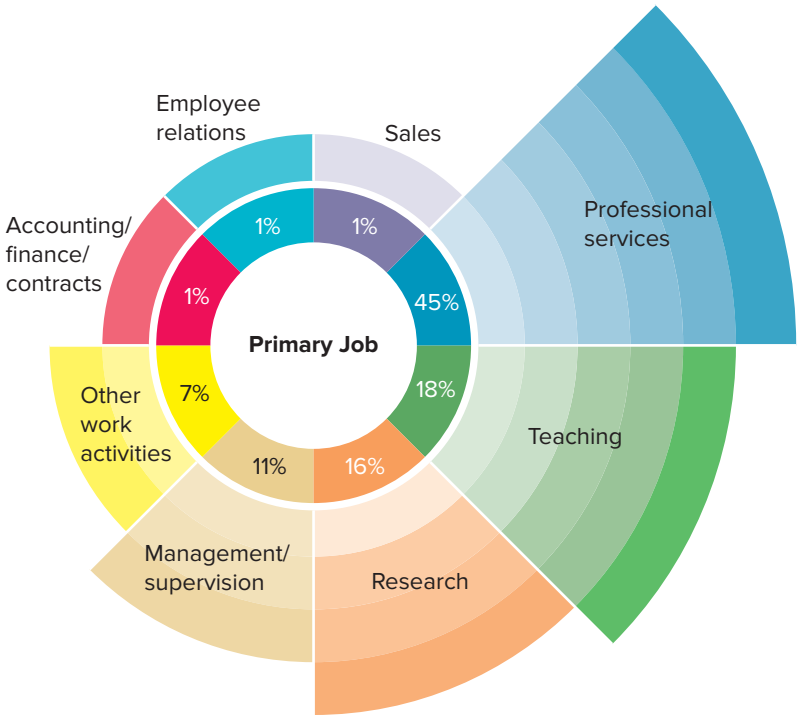

FIGURE 3 The breakdown of where U.S. psychologists (who have a PhD or PsyD) work.

Source: Stamm, K., Lin, Luona, and Cristidis, P. (2016, June). Datapoint. *Monitor on Psychology,* 12.

counseling centers, government human-services organizations, businesses, schools, and even prisons. Psychologists are employed in the military, working with soldiers, veterans, and their families, and they work for the federal government Department of Homeland Security, fighting terrorism. Psychologists who specialize in program evaluation are increasingly employed by foundations that want to assess the value of programs they fund (American Psychological Association, 2016; DeAngelis & Monahan, 2008; Moscoso et al., 2013).

Most psychologists, though, work in academic settings, allowing them to combine the three major roles played by psychologists in society: teacher, scientist, and clinical practitioner. Many psychology professors are also actively involved in research or in serving clients. Whatever the particular job site, however, psychologists share a commitment to improving individual lives as well as society in general.

Keep in mind that professionals from a variety of occupations use the findings of psychologists. To understand how nonpsychologists use psychology, you will find a feature titled "From the perspective of . . ." throughout the text.

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From the perspective of...

An Educator Imagine that a classroom teacher wants to improve the performance of a 10-year-old boy who is not doing well in math. What branches of psychology might she draw on to get ideas about how to help him?

PSYCHOLOGISTS: A PORTRAIT

Although there is no "average" psychologist in terms of personal characteristics, we can draw a statistical portrait of the field. Nearly 200,000 active psychologists are working today in the United States, but they are outnumbered by psychologists in other countries. In fact, psychologists in the United States now make up only between 20% to 24% of the world's psychologists. Although most research is conducted in the United States, psychologists in other countries are increasingly influential in adding to the knowledge base and practices of psychology (Rees & Seaton, 2011; American Psychological Association, 2015; Takooshian et al., 2016).

In the United States, women outnumber men in the field, a big change from earlier years, when women faced bias and were actively discouraged from becoming psychologists. Today, for every male psychologist, there are 2.1 female psychologists. Those in the field are actively debating whether and how to seek balance in the proportion of men and women in the field (Cynkar, 2007; Willyard, 2011; American Psychological Association, 2015).

Furthermore, despite the higher proportion of women in the field, women still lag behind when it comes to salaries and high-status positions within the field. For example, female psychologists working in four-year colleges and medical schools earn, on average, 82.7% of what males make (Clay, 2017).

The majority of psychologists in the United States are white, limiting the diversity of the field. Only around 16% of all professionally active psychologists are members of racial minority groups. Although the numbers of minority individuals entering the field are far greater than a decade ago and continue to grow, the numbers have not kept

up with the dramatic growth of the minority population at large (Maton et al., 2006; Chandler, 2011; American Psychological Association, 2015).

The underrepresentation of racial and ethnic minorities among psychologists is significant for several reasons. First, the field of psychology is diminished by a lack of the diverse perspectives and talents that minority-group members can provide. Furthermore, minority-group psychologists serve as role models for members of minority communities, and their underrepresentation in the profession might deter other minority-group members from entering the field. Finally, because members of minority groups often prefer to receive psychological therapy from treatment providers of their own race or ethnic group, the rarity of minority psychologists can discourage some members of minority groups from seeking treatment (Bryant et al., 2005; Stevens, 2015; Stewart et al., 2017).

Study Alert

Be sure you can differentiate between a PhD (doctor of philosophy) and a PsyD (doctor of psychology), as well as between psychologists and psychiatrists.

THE EDUCATION OF A PSYCHOLOGIST

How do people become psychologists? The most common route is a long one. Most psychologists have a doctorate, either a *PhD* (doctor of philosophy) or, less frequently, a *PsyD* (doctor of psychology). The PhD is a research degree that requires a dissertation based on an original investigation. The PsyD is obtained by psychologists who want to focus on the treatment of psychological disorders. Note that psychologists are distinct from psychiatrists, who have a medical degree and specialize in the diagnosis and treatment of psychological disorders, often using treatments that involve the prescription of drugs.

Both the PhD and the PsyD typically take 4 or 5 years of work past the bachelor's level. Some fields of psychology involve education beyond the doctorate. For instance, doctoral-level clinical psychologists, who deal with people with psychological disorders, typically spend an additional year doing an internship.

About a third of people working in the field of psychology have a master's degree as their highest degree, which they earn after 2 or 3 years of graduate work. These psychologists teach, provide therapy, conduct research, or work in specialized programs dealing with drug abuse or crisis intervention. Some work in universities, government, and business, collecting and analyzing data.

CAREERS FOR PSYCHOLOGY MAJORS

Although some psychology majors head for graduate school in psychology or an unrelated field, the majority join the workforce immediately after graduation. Most report that the jobs they take after graduation are related to their psychology background.

An undergraduate major in psychology provides excellent preparation for a variety of occupations. Because undergraduates who specialize in psychology develop good analytical skills, are trained to think critically, and are able to synthesize and evaluate information well, employers in business, industry, and the government value their preparation (Kuther, 2003).

The most common areas of employment for psychology majors are in the social services, including working as administrators, serving as a counselors, and providing direct care. Some 20% of recipients of bachelor's degrees in psychology work in the social services or in some other form of public affairs. In addition, psychology majors often enter the fields of education or business or work for federal, state, and local governments (see Figure 4; Murray, 2002; Rajecki & Borden, 2011; Sternberg, 2017).

FIGURE 4 Although many psychology majors pursue employment in social services, a background in psychology can prepare one for many professions outside the social services field. What is it about the science and art of psychology that make it such a versatile field?

Source: Adapted from Kuther, T. L. (2003). *Your career in psychology: Psychology and the law.* New York: Wadsworth.

Positions Obtained by Psychology Majors

Business Field	Education/ Academic Field	Social Field
Administrative assistant	Administration	Activities coordinator
Advertising trainee	Child-care provider	Behavioral specialist
Affirmative action officer	Child-care worker/ supervisor	Career counselor
Benefits manager	Data management	Case worker
Claims specialist	Laboratory assistant	Child protection worker
Community relations officer	Parent/family education	Clinical coordinator
Customer relations	Preschool teacher	Community outreach worker
Data management	Public opinion surveyor	Corrections officer
Employee counselor	Research assistant	Counselor assistant
Employee recruitment	Teaching assistant	Crisis intervention counselor
Human resources coordinator/manager/ specialist		Employment counselor
Labor relations manager/ specialist		Group home attendant
Loan officer		Mental health assistant
Management trainee		Occupational therapist
Marketing		Probation officer
Personnel manager/officer		Program manager
Product and services research		Rehabilitation counselor
Programs/events coordination		Residence counselor
Public relations		Social service assistant
Retail sales management		Social worker
Sales representative		Substance abuse counselor
Special features writing/ reporting		Youth counselor
Staff training and development		
Trainer/training office		

RECAP/EVALUATE/RETHINK

RECAP

LO 1-1 What is the science of psychology?

- Psychology is the scientific study of behavior and mental processes, encompassing not just what people do but also their biological activities, feelings, perceptions, memory, reasoning, and thoughts.

LO 1-2 What are the major specialties in the field of psychology?

- Behavioral neuroscientists focus on the biological basis of behavior, and experimental psychologists study the processes of sensing, perceiving, learning, and thinking about the world.
- Cognitive psychology, an outgrowth of experimental psychology, studies higher mental processes, including memory, knowing, thinking, reasoning, problem solving, judging, decision making, and language.
- Developmental psychologists study how people grow and change throughout the life span.
- Personality psychologists consider the consistency and change in an individual's behavior, as well as the individual differences that distinguish one person's behavior from another's.
- Health psychologists study psychological factors that affect physical disease, whereas clinical psychologists consider the study, diagnosis, and treatment of abnormal

behavior. Counseling psychologists focus on educational, social, and career adjustment problems.
- Social psychology is the study of how people's thoughts, feelings, and actions are affected by others.
- Cross-cultural psychology examines the similarities and differences in psychological functioning among various cultures.
- Other increasingly important fields are evolutionary psychology, behavioral genetics, and clinical neuropsychology.

LO 1-3 Where do psychologists work?

- Psychologists are employed in a variety of settings. Although the primary sites of employment are private practice and colleges, many psychologists are found in hospitals, clinics, community mental health centers, and counseling centers.

EVALUATE

Match each subfield of psychology with the issues or questions posed below.

a. behavioral neuroscience
b. experimental psychology
c. cognitive psychology
d. developmental psychology
e. personality psychology
f. health psychology
g. clinical psychology
h. counseling psychology
i. educational psychology
j. school psychology
k. social psychology
l. industrial psychology

1. Joan, a college freshman, is worried about her grades. She needs to learn better organizational skills and study habits to cope with the demands of college.
2. At what age do children generally begin to acquire an emotional attachment to their fathers?
3. It is thought that pornographic films that depict violence against women may prompt aggressive behavior in some men.
4. What chemicals are released in the human body as a result of a stressful event? What are their effects on behavior?
5. Luis is unique in his manner of responding to crisis situations, with an even temperament and a positive outlook.
6. The teachers of 8-year-old Jack are concerned that he has recently begun to withdraw socially and to show little interest in schoolwork.
7. Janetta's job is demanding and stressful. She wonders if her lifestyle is making her more prone to certain illnesses, such as cancer and heart disease.
8. A psychologist is intrigued by the fact that some people are much more sensitive to painful stimuli than others are.
9. A strong fear of crowds leads a young man to seek treatment for his problem.
10. What mental strategies are involved in solving complex word problems?
11. What teaching methods most effectively motivate elementary school students to successfully accomplish academic tasks?
12. Jessica is asked to develop a management strategy that will encourage safer work practices in an assembly plant.

RETHINK

Do you think intuition and common sense are sufficient for understanding why people act the way they do? In what ways is a scientific approach appropriate for studying human behavior?

Answers to Evaluate Questions

a-4; b-8; c-10; d-2; e-5; f-7; g-9; h-1; i-11; j-6; k-3; l-12

KEY TERM

psychology

Module 2

A Science Evolves: The Past, the Present, and the Future

LEARNING OUTCOMES

LO 2-1 What are the origins of psychology?

LO 2-2 What are the major approaches in contemporary psychology?

Seven thousand years ago, people assumed that psychological problems were caused by evil spirits. To allow those spirits to escape from a person's body, ancient healers chipped a hole in a patient's skull with crude instruments–a procedure called *trephining*.

According to the 17th-century French philosopher René Descartes, nerves were hollow tubes through which "animal spirits" conducted impulses in the same way that water is transmitted through a pipe. When a person put a finger too close to a fire, heat was transmitted to the brain through the tubes.

Franz Josef Gall, an 18th-century physician, argued that a trained observer could discern intelligence, moral character, and other basic personality characteristics from the shape and number of bumps on a person's skull. His theory gave rise to the field of phrenology, employed by hundreds of practitioners in the 19th century.

Although these explanations might sound far-fetched, in their own times they represented the most advanced thinking about what might be called the psychology of the era. Our understanding of behavior has progressed tremendously since the 18th century, but most of the advances have been recent. As sciences go, psychology is one of the new kids on the block. (For highlights in the development of the field, see Figure 1.)

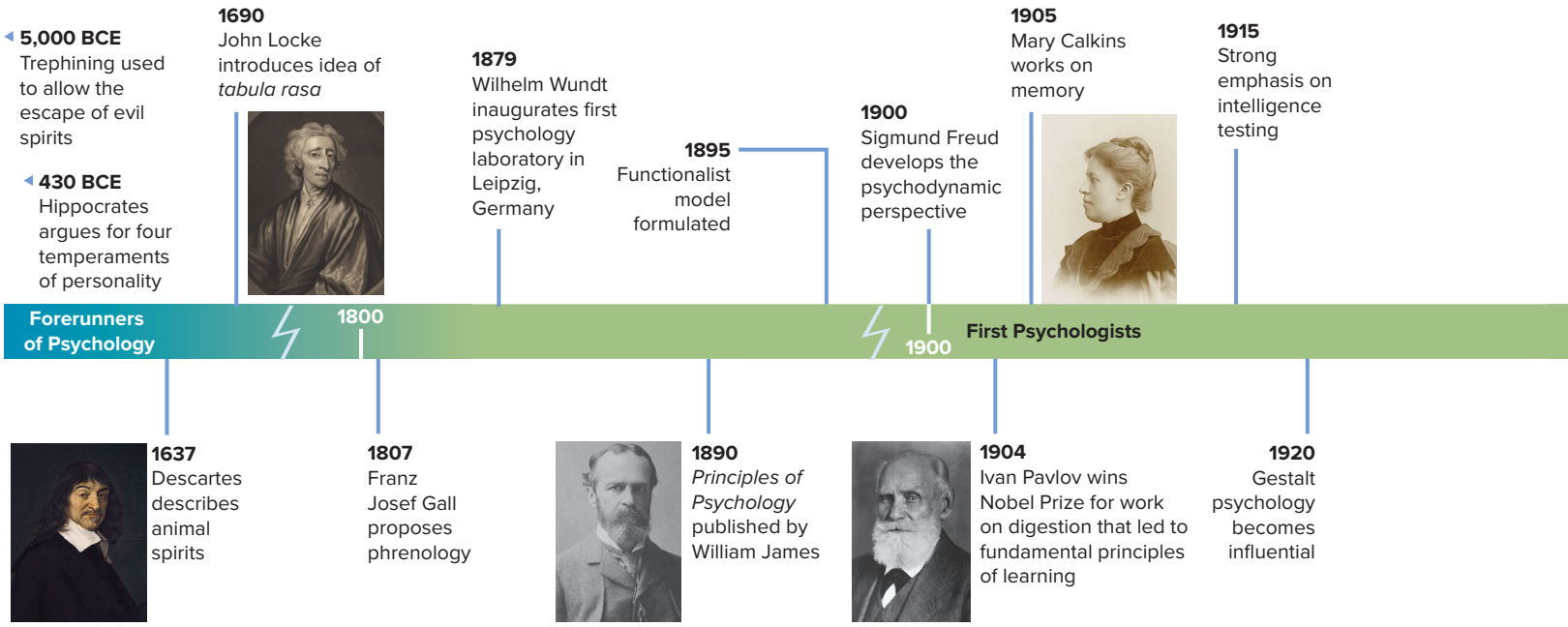

FIGURE 1 This time line illustrates major milestones in the development of psychology.

(Rene Descartes): ©Everett - Art/Shutterstock; (John Locke): Source: National Gallery of Art; (William James): ©Paul Thompson/FPG/Getty Images; (Ivan Pavlov): ©Bettmann/Getty Images; (Mary Whiton Calkins): Source: Wellesley College Archives; (John B. Watson): ©George Rinhart/Corbis via Getty Images; (Abraham Maslow and Jean Piaget): ©Bettmann/Getty Images; (Dr. Elizabeth Loftus): ©Elizabeth Loftus