DISCOVERING PSYCHOLOGY

SANDRA E. HOCKENBURY | SUSAN A. NOLAN | DON H. HOCKENBURY

seventh edition

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To Laura, for the love and laughter
along the way—S.E.H.

For Mira, Sophie, and Julie—S.A.N.

ABOUT THE AUTHORS

Don Hockenbury

Sandra E. Hockenbury is a science writer who specializes in psychology. Sandy received her B.A. from Shimer College and her M.A. from the University of Chicago, where she was also a research associate at the Institute of Social and Behavioral Pathology. Prior to co-authoring *Psychology* and *Discovering Psychology,* Sandy worked for several years as a psychology editor in both academic and college textbook publishing. Sandy has also taught as an adjunct faculty member at Tulsa Community College.

Sandy's areas of interest include positive psychology, cross-cultural psychology, and the intersection of Buddhist philosophy, neuroscience, and psychology. She is a member of the American Psychological Association (APA), the Association for Psychological Science (APS), and the American Association for the Advancement of Science (AAAS). An avid hiker, Sandy has twice served as a volunteer with Nomads Clinic, a nonprofit organization that brings medical care to remote areas in the Himalayan regions of Nepal and the Tibetan Plateau.

Ivan Bojanic

Susan A. Nolan is Professor of Psychology at Seton Hall University in New Jersey. Susan researches interpersonal consequences of mental illness, and the role of gender in science careers. Her research has been funded by the National Science Foundation. Susan is Past President of the Eastern Psychological Association (EPA) and a Fellow of the EPA, the American Psychological Association (APA), and the Association for Psychological Science. She holds an A.B. from the College of the Holy Cross and a Ph.D. from Northwestern University.

Susan is fascinated by the applications of psychology to the "real world," both locally and globally. She served as a representative from the APA to the United Nations for five years, and is the Vice President for Diversity and International Relations of the Society for the Teaching of Psychology and a 2015-2016 U.S. Fulbright Scholar in Bosnia and Herzegovina. She is an avid traveler. Susan uses the examples she encounters through these experiences in the classroom, in this textbook, and in the statistics textbooks that she co-authors.

Don Hockenbury

Don H. Hockenbury recently retired after 36 years of teaching psychology at Tulsa Community College's Northeast Campus. As one of the founding faculty that opened the Northeast Campus in the fall of 1978, more than 10,000 students experienced Don's enthusiastic teaching style over the ensuing decades. Beginning in 1989, Don's classroom expanded to a national level as he and Sandy Hockenbury began the exciting—but daunting—task of writing the first edition of *Psychology.* In doing so, Don and Sandy were committed to creating an introductory psychology text that actively engaged diverse students in much the same way that Don shared his passion for psychology in the classroom. After seven years of almost nonstop work, the first edition of Hockenbury & Hockenbury *Psychology* was published in December 1996, followed a year later by the first edition of *Discovering Psychology.* In co-authoring the first five editions of *Psychology* and *Discovering Psychology,* Don and Sandy's texts were used by millions of students. Although Don is no longer actively involved in classroom teaching, his passion for teaching others about the most exciting science that exists remains as strong as ever.

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TO THE INSTRUCTOR

Welcome to the seventh edition of *Discovering Psychology!*

We've been gratified by the enthusiastic response to the six previous editions of *Discovering Psychology.* We've especially enjoyed the e-mails and letters we've received from students who felt that our book was speaking directly to them. Students and faculty alike have told us how much they appreciated *Discovering Psychology's* distinctive voice, its inviting learning environment, the engaging writing style, and the clarity of its explanations—qualities we've maintained in the seventh edition.

But as you'll quickly see, this new edition is marked by exciting new changes: a fresh new look, a stronger and more explicit emphasis on scientific literacy, a digital experience that is more tightly integrated for both students and instructors, and—most important—a new co-author! More about these features later.

Before we wrote the first word of the first edition, we had a clear vision for this book: Combine the scientific authority of psychology with a narrative that engages students and relates to their lives. Drawing from decades (yes, it really has been decades) of teaching experience, we've written a book that weaves cutting-edge psychological science with real-life stories that draw students of all kinds into the narrative.

While there is much that is new, this edition of *Discovering Psychology* reflects our continued commitment to the goals that have guided us as teachers and authors. Once again, we invite you to explore every page of the new edition of *Discovering Psychology*, so you can see firsthand how we:

- Communicate both the scientific rigor and the personal relevance of psychology
- Encourage and model critical and scientific thinking
- Show how classic psychological studies help set the stage for today's research
- Clearly explain psychological concepts and the relationships among them
- Present controversial topics in an impartial and evenhanded fashion
- Expand students' awareness of cultural and gender influences
- Create a student-friendly, personal learning environment
- Provide an effective pedagogical system that helps students develop more effective learning strategies

What's New in the Seventh Edition: Big Changes!

We began the revision process with the thoughtful recommendations and feedback we received from hundreds of faculty using the text, from reviewers, from colleagues, and from students. We also had face-to-face dialogues with our own students as well as groups of students across the country. As you'll quickly see, the seventh edition marks a major step in the evolution of *Discovering Psychology.* We'll begin by summarizing the biggest changes to this edition—starting with the most important: a new co-author!

Introducing . . . Susan Nolan

We are very excited and pleased to introduce **Susan A. Nolan** as our new co-author. When the time came to search for a new collaborator, we looked for someone who was an accomplished researcher, a dedicated teacher, and an engaging writer with a passion for communicating psychological science to a broad audience. A commitment to gender equality and cultural sensitivity, and, of course, a good sense of humor were also requirements, as were energy and enthusiasm. We found that rare individual in Susan A. Nolan, Professor of Psychology at Seton Hall University.

Susan made several valuable contributions to the sixth edition of *Discovering Psychology,* and the success of that collaboration prompted our decision to make her a full co-author with this new edition. Reflecting her expertise in clinical, personality, and social psychology, and her background in gender, culture, and diversity studies, Susan revised Chapter 7, Thinking, Language, and Intelligence; Chapter 9, Lifespan Development; Chapter 10, Personality; Chapter 11, Social Psychology; Chapter 12, Stress, Health, and Coping; Chapter 13, Psychological Disorders; and Chapter 14, Therapies. And, she participated fully in our text-wide decisions about design, photographs, art, and content. Beyond the text, she's been fully involved in the development of some exciting new digital resources for the new edition. But more on that below.

New Emphasis on Scientific Literacy

As psychology instructors well know, students come to psychology with many preconceived ideas, some absorbed from popular culture, about the human mind and behavior. These notions are often inaccurate. Complicating matters is the fact that for many students, introductory psychology may be their first college-level science course—meaning that students sometimes have only the vaguest notion of the nature of scientific methodology and evidence. Thus, one important goal for introductory psychology is to teach students how to distinguish fact from opinion, and research-based, empirical findings from something heard from friends or encountered on the Internet.

The importance of this objective is reinforced by the 2013 revision of the APA Guidelines for the Undergraduate Psychology Major. Scientific Literacy and Critical Thinking is identified as one of its five key goals. Psychology educators agree that the skills students learn in psychology can be as important as the content. Scientific literacy and critical thinking skills can help students in a variety of careers, a variety of majors, and can help ensure that students become critical consumers of scientific information in the world around them.

Since the first edition, a hallmark of *Discovering Psychology* and its sister publication, *Psychology,* has always been their emphasis on critical and scientific thinking. *Psychology* was the first introductory psychology textbook to formally discuss and define pseudosciences and to distinguish pseudoscience from science. Our trademark *Science Versus Pseudoscience* boxes, which take a critical look at the evidence for and against phenomena as diverse as graphology, educational videos for infants, and ESP research have proved very popular among instructors and students alike.

In this new edition, we decided to make the **scientific literacy** theme even more explicit. These new features are described below.

New *Think Like a Scientist* Model and Immersive Learning Activities

To help students develop their scientific thinking skills and become critical consumers of information, a unique feature of the seventh edition is a set of **Think Like a Scientist** Immersive Learning Activities found in LaunchPad. Developed for *Psychology* and *Discovering Psychology* by co-authors Susan Nolan and Sandy Hockenbury, each activity provides students with the opportunity to apply their critical thinking and scientific thinking skills. These active learning exercises combine video, audio, text, games, and assessment to help students master scientific literacy skills they will use well beyond the introductory course. In these activities, students are invited to critically explore questions they encounter in everyday life, such as "Can you learn to tell when someone is lying?" and "Are some people 'left-brained' and some people 'right-brained'?"

These activities employ the four-step model introduced in the new Critical Thinking box "How to Think Like a Scientist" in Chapter 1. These four steps include:

1. Identify the Claim
2. Evaluate the Evidence
3. Consider Alternative Explanations
4. Consider the Source of the Research or Claim

Think Like a SCIENTIST

Can you be classified as right-brained or left-brained? Go to LaunchPad: Resources to **Think Like a Scientist** about **The Right Brain Versus the Left Brain.**

LaunchPad

The *Think Like a Scientist* Immersive Learning Activities are designed to teach and develop a skill set that will persist long after the final exam grades are recorded. We hope to develop a set of transferable skills that can be applied to analyzing dubious claims in any subject area—from advertisements to politics. We think students will enjoy completing these activities, and that instructors will value them. The seventh edition of *Discovering Psychology* includes the following *Think Like a Scientist* Immersive Learning Activities:

- Contagious Online Emotions (Chapter 1)
- The Right Brain Versus the Left Brain (Chapter 2)
- ESP (Chapter 3)
- Multitasking (Chapter 4)
- Positive and Negative Reinforcement (Chapter 5)
- Eyewitness Testimony (Chapter 6)
- Brain Exercises (Chapter 7)
- Lie Detection (Chapter 8)
- Learning Environments (Chapter 9)
- Employment-Related Personality Tests (Chapter 10)
- Online Dating (Chapter 11)
- Coping with Stress (Chapter 12)
- Tracking Mental Illness Online (Chapter 13)
- Ketamine (Chapter 14)

New *Myth or Science?* Feature

MYTH ◀ SCIENCE

Is it true that multitasking is an efficient way to get things done?

Students often come to the introductory psychology course with misperceptions about psychological science. Our new **Myth or Science?** feature will help dispel some of these popular but erroneous beliefs.

Each chapter begins with a list of "Is It True?" questions that reflect popular myths about human behavior. These statements were tested with market research to see what percentage of students actually endorsed them. In some cases, agreement reached astonishing levels. For example, in one survey, more than 85% of students agreed that "the right brain is creative and intuitive, and the left brain is analytic and logical" and that "some people are left-brained and some people are right-brained." More than 70% of students agreed that "flashbulb memories are more accurate than normal memories" and that "most psychologists agree with Freud's personality theory." And, more than 90% of surveyed students agreed that "dying people go through five predictable stages." Even frequently debunked statements like "you only use 10% of your brain" received a high rate of agreement.

After being posed at the beginning of the chapter, each question is answered in the body of the chapter. A margin note signals the student to find the explanation and indicates whether the statement is "myth" or "science."

New Data Presentation Program

Our new co-author Susan Nolan brought her expertise in data analysis and presentation to the fully revised graphic art program. We've redesigned our graphs more closely in line with graphing expert Edward Tufte's (1997) guidelines for clear, consistent data visualizations. Graphs are simpler than in previous editions. Most now use fewer colors per graph, and fewer and lighter background gridlines, to allow the representations of data—the bars, for example—to emerge as the most important element. We have used plain bar graphs whenever possible, starting the *y* axes at 0. When the variable is a percentage, we extended the *y* axis to 100% whenever possible. We hope that the simpler, more streamlined graphs will allow students to more readily "see" and accurately interpret data.

New Research Methods Section in Chapter 1

Introductory chapters have a reputation for being dry and boring. Instructors, though, know that there are few alternatives: history and methods need to be taught before plunging into content-heavy chapters. For this edition, the section on research methods has been completely rewritten to highlight *psychological science on the topic of student success*. New research examples—such as the impact of social media on well-being, the effect of multitasking on studying, the testing effect, and measures of student well-being—were chosen for their relevance to today's students' lives.

The new end-of-chapter application, **Psych for Your Life: Successful Study Techniques**, provides six research-based strategies to maximize student success. In other words, rather than waiting for the Learning or Memory chapters to introduce study skills tips, we've incorporated these important findings right into Chapter 1—and used them to demonstrate the relevance of psychological research in students' everyday lives and academic success. Along with demonstrating to students *how* psychological research can be used to improve everyday life, the new application gives them a solid foundation of research-based study skills and tips.

All-New Digitally Integrated Package

Today's college students are digital natives. They are accustomed to going online to seek answers and to connect with friends, fellow students, and their instructors. Past editions of *Discovering Psychology* provided a wealth of online resources for students, but the new seventh edition marks a step to a new level of digital integration with **LaunchPad**.

LaunchPad, our new course space, combines an interactive e-Book with high-quality multimedia content and ready-made assessment options, including LearningCurve adaptive quizzing. Pre-built, curated units are easy to assign or adapt with your own material, such as readings, videos, quizzes, discussion groups, and more. LaunchPad also provides access to Gradebook, which offers a window into your students' performance—either individually or as a whole. While a streamlined interface helps students focus on what's due next, social commenting tools let them engage, make connections, and learn from each other. Use LaunchPad on its own or integrate it with your school's learning management system so your class is always on the same page.

The Latest Psychological Science

As was the case with previous editions, we have extensively updated every chapter with the latest research. We have pored over dozens of journals and clicked through thousands of Web sites to learn about the latest in psychological science. As a result, this new edition features scores of new topics. Just to highlight a few additions, the seventh edition includes brand-new sections on scientific thinking and factors contributing to college success (Chapter 1); traumatic brain injury and concussion (Chapter 2); evolutionary and interactionist theories of gender development (Chapter 9), transgender identity (Chapter 9); aggression and violence (Chapter 11); and a critical look at the effectiveness of antidepressants compared to placebo treatments (Chapter 14). And, there are four new prologues (Chapters 1, 8, 9, and 13).

In addition, we have significantly updated coverage of neuroscience and expanded our coverage of culture, gender, and diversity throughout the text. DSM-5 terminology and criteria have been fully integrated into the new edition.

As of our last count, there are over 1,000 new references in the seventh edition of *Discovering Psychology,* more than half of which are from 2013, 2014, or 2015. These new citations reflect the many new and updated topics and discussions in the seventh edition of *Discovering Psychology.* From the effects of social media and multitasking on student success to the latest discoveries about oxytocin, aggression, stress and telomeres, or the effectiveness of meditation in controlling pain and improving attention, our goal is to present students with interesting, clear explanations of psychological science. Later in this preface, you'll find a list of the updates by chapter.

Michael J. Minardi/Getty Images

Dave Duerson Hockey players Derek Boogaard and Bob Probert. Football players John Grimsley, Chris Henry, and Junior Seau. Wrestler Chris Benoit. What do these men have in common? Like Dave Duerson and dozens of other former NFL players, all are professional athletes whose brains, after their deaths, displayed telltale signs of chronic traumatic encephalopathy, or CTE (Gavett & others, 2011; Tartaglia & others, 2014).

New Design, New Photos

Created with today's media-savvy students in mind, the clean, modern, new look of *Discovering Psychology* showcases the book's cutting-edge content and student-friendly style. Carefully chosen photographs—more than 50 percent of them new—apply psychological concepts and research to real-world situations. Accompanied by information-rich captions that expand upon the text, vivid and diverse photographs help make psychology concepts come alive, demonstrating psychology's relevance to today's students.

Connections to the American Psychological Association's Guidelines for the Undergraduate Psychology Major

The American Psychological Association has developed the *APA Guidelines for the Undergraduate Psychology Major: Version 2.0* to provide "optimal expectations for performance" by undergraduate psychology students. The *APA Guidelines* include five broad goals, which are summarized below. This table shows how Hockenbury, Nolan, and Hockenbury's *Discovering Psychology,* Seventh Edition, helps instructors and students achieve these goals.

Goal 1: Knowledge Base in Psychology	
APA Learning Objectives: 1.1—Describe key concepts, principles, and overarching themes in psychology • *Discovering Psychology* covers the full range of psychology's subject areas: history of the field, biological psychology, experimental and cognitive psychology, developmental psychology, social psychology, personality and clinical psychology • Chapter 1, Introduction and Research Methods, provides an overview of the history and the scope of contemporary psychological science 1.2—Develop a working knowledge of psychology's content domains • *Discovering Psychology* provides a comprehensive, up-to-date survey of the full range of psychology's subject areas • Thousands of research citations, with more than 500 from research no older than 2013 • In Focus and Focus on Neuroscience boxes provide in-depth looks at particular topics • Chapter 1, Introduction and Research Methods	1.3—Describe applications of psychology • Psych for Your Life end-of-chapter sections (see full list of titles on page xli) show students how they can apply psychological principles to improve their own lives • "Specialty Areas in Psychology" in Chapter 1, Introduction and Research Methods • Appendix B, Industrial/Organizational Psychology
Goal 2: Scientific Inquiry and Critical Thinking	
APA Learning Objectives: 2.1—Use scientific reasoning to interpret psychological phenomena • Chapter 1, Introduction and Research Methods, especially the "How to Think Like a Scientist" model introduced on page 31 and discussion of pseudoscience characteristics on pages 20–21. • Critical Thinking boxes (see full list of titles on page xxxvi) • Science Versus Pseudoscience boxes (see full list of titles on pages xxxv–xxxvi) • Myth or Science feature (see description on page xxii) • *Think Like a Scientist* Immersive Learning Activities, accessible on LaunchPad • Focus on Neuroscience boxes (see full list on pages xxxix and xli) • PsychSim 6.0, Concept Practice, Video Activities, and Labs, accessible on LaunchPad 2.2—Demonstrate psychology information literacy • Chapter 1, Introduction and Research Methods • Appendix A, Statistics: Understanding Data • Box on "Psychological Research Using Brain Imaging" (pages 32–33) explains the utility and limitations of brain-imaging research • Focus on Neuroscience boxes show students how to evaluate research findings based on brain-imaging techniques • Science versus Pseudoscience boxes teach students how to critically evaluate media claims • *Think Like a Scientist* Immersive Learning Activities, accessible on LaunchPad • PsychSim 6.0, Concept Practice, Video Activities, and Labs, accessible on LaunchPad	2.3—Engage in innovative and integrative thinking and problem solving • "Solving Problems and Making Decisions" in Chapter 7, Thinking, Language, and Intelligence • Psych for Your Life feature "A Workshop on Creativity" • *Think Like a Scientist* Immersive Learning Activities, accessible on LaunchPad • PsychSim 6.0, Concept Practice, Video Activities, and Labs, accessible on LaunchPad 2.4—Interpret, design, and conduct basic psychological research • Chapter 1, Introduction and Research Methods, describes the range of psychological research strategies, including examples related to student success • Appendix A, Statistics: Understanding Data 2.5—Incorporate sociocultural factors in scientific inquiry • Multiple chapters include the impact of sociocultural factors on behavior and psychological processes, especially Chapter 9, Lifespan Development; Chapter 11, Social Psychology; Chapter 12, Stress, Health and Coping; Chapter 13, Psychological Disorders; and Chapter 14, Therapies. • Culture and Human Behavior boxes (see full list of titles on pages xxxvii and xxxix) • See list of cultural coverage topics integrated within the main narrative on pages xxxvii–xxxviii • See list of gender coverage topics integrated within the main narrative on page xl

Goal 3: Ethical and Social Responsibility in a Diverse World	
APA Learning Objectives: 3.1—Apply ethical standards to evaluate psychological science and practice • "Ethics in Psychological Research" in Chapter 1, Introduction and Research Methods • Discussions of obedience, conformity, the study known as the Stanford Prison Experiment, altruism, aggression, and deindividuation in Chapter 11, Social Psychology • *Think Like a Scientist* Immersive Learning Activity "Contagious Online Emotions," accessible on LaunchPad 3.2—Build and enhance interpersonal relationships • Psych for Your Life features "Raising Psychologically Healthy Children," "Reducing Conflict in Intimate Relationships," "Understanding and Helping to Prevent Suicide" • "Social Support" in Chapter 12, Stress, Health, and Coping • See list of gender coverage topics integrated within the main narrative on page xl • Culture and Human Behavior boxes (see full list of titles on pages xxxvii and xxxix)	3.3—Adopt values that build community at local, national, and global levels • Discussions of gender in Chapter 9, Lifespan Development; prejudice, obedience, conformity, the study known as the Stanford Prison Experiment, altruism, and aggression in Chapter 11, Social Psychology; stigma of obesity in Chapter 8, Motivation and Emotion; and of mental illness in Chapters 13, Psychological Disorders, and 14, Therapies • See list of cultural coverage topics integrated within the main narrative on pages xxxvii–xxxviii • See list of gender coverage topics integrated within the main narrative on page xl • Culture and Human Behavior boxes (see full list of titles on pages xxxvii and xxxix)
Goal 4: Communication	
APA Learning Objectives: 4.1—Demonstrate effective writing for different purposes • "The Scientific Method" in Chapter 1 (Introduction and Research Methods) • Questions in Critical Thinking boxes (see full list of titles on page xxxvi) • Response features in *Think Like a Scientist* Immersive Learning Activities, accessible on LaunchPad • Essay questions in Test Bank, which is aligned with APA objectives	4.2—Exhibit effective presentation skills for different purposes • Instructor's Resource Manual with classroom activities that work to develop oral presentation skills, accessible on LaunchPad 4.3—Interact effectively with others • Psych for Your Life features "Raising Psychologically Healthy Children," "Reducing Conflict in Intimate Relationships," "The Persuasion Game," and "Understanding and Helping to Prevent Suicide" • Instructor's Resource Manual with classroom exercises that promote skills for working in a group, accessible on LaunchPad
Goal 5: Professional Development	
APA Learning Objectives: 5.1—Apply psychological content and skills to career goals • "Specialty Areas in Psychology" in Chapter 1, Introduction and Research Methods • Focus on psychological research on student success and study skills in Chapter 1, Introduction and Research Methods • Psych for Your Life features "Successful Study Techniques" and "Turning Your Goals into Reality" • Appendix B, Industrial/Organizational Psychology 5.2—Exhibit self-efficacy and self-regulation • "Introduction" and "Psychological Needs as Motivators" in Chapter 8 (Motivation and Emotion) • "Individual Factors That Influence the Response to Stress" and "Coping" in Chapter 12, Stress, Health, and Coping • Psych for Your Life features (see full list of titles on page xli) • *Think Like a Scientist* Immersive Learning Activities "Multitasking" and "Positive and Negative Reinforcement," accessible on LaunchPad	5.3—Refine project-management skills • "Solving Problems and Making Decisions" in Chapter 7, Thinking, Language, and Intelligence • Psych for Your Life features "A Workshop on Creativity" and "Turning Your Goals into Reality" • Appendix B, Industrial/Organizational Psychology 5.4—Enhance teamwork capacity • Appendix B, Industrial/Organizational Psychology

Major Chapter Revisions

As you page through our new edition, you will encounter new examples, boxes, photos, and illustrations in every chapter. Below are highlights of some of the most significant changes:

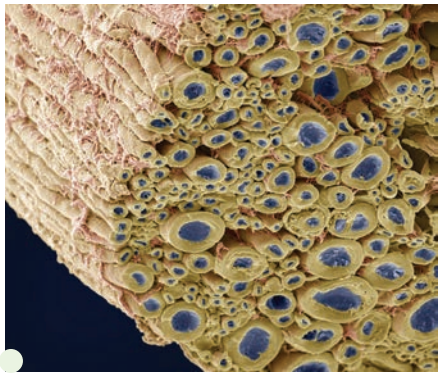
CHAPTER 1, INTRODUCTION AND RESEARCH METHODS

- New Prologue, "The First Exam," focusing on test experiences and student study strategies
- New chapter introduction incorporating psychology's goals
- New photo example of the topics that psychologists study
- New photo examples of the biological perspective and studying behavior from different psychological perspectives

- New summary table and graphs showing specialty areas and employment settings for psychologists
- "What Is Cross-Cultural Psychology?" box streamlined and updated with new discussion of rice-cultivation versus wheat-cultivation cultures in China
- New student-focused research examples and photo illustrations of concepts in research methods, including forming a hypothesis and meta-analysis
- New example of how to read a journal reference
- Revised and updated Science Versus Pseudoscience box
- New example of naturalistic observation
- New student-focused example of survey research using the National Survey of Student Engagement, including results comparing study habits of different majors
- New section on correlational studies, using research on Facebook likes and student study behaviors and strategies to illustrate correlations
- New explanation of experimental methods, using an experiment on the testing effect to illustrate the key terms and important concepts of experimental design
- New Critical Thinking box, "How to Think Like a Scientist," introducing a four-step model for scientific thinking that students can apply to any claim or belief
- New photo example of functional magnetic resonance imaging
- Discussion of use of animals in research moved into main text, illustrated with new photo example
- Entirely new "Psych for Your Life" application that provides six research-based study techniques to enhance student success. Along with providing helpful information right at the beginning of the semester, the application demonstrates the value and relevance of psychological research.

CHAPTER 2, NEUROSCIENCE AND BEHAVIOR

- Added information in Figure 2.1 about the structure of sensory neurons
- New photo of neuron and new research on the functions of glial cells and myelin
- Streamlined discussions of communication within the neuron, the action potential, and communication between neurons
- New photo of electrical impulses in the brain
- Discussion of important neurotransmitters expanded to include glutamate, now a boldfaced key term
- Endorphins discussion integrated into main text and illustrated with photo rather than discussed in a separate Focus on Neuroscience box
- New photo examples of botox, dopamine, and Parkinson's Disease
- New photo showing cross section of peripheral nerve
- Expanded discussion of oxytocin, now a boldfaced key term, with coverage of research on its diverse effects on social motivation and behavior
- Coverage of "The 10% Myth" now integrated into text
- Updated and streamlined discussion of plasticity and neurogenesis, now integrated into a single section and including 2013 research on carbon-14 dating of new neuron
- New photo and updated research on Phineas Gage's injury
- Simplified illustration of cerebral cortex lobes
- Revised and updated Critical Thinking box, "'His' and 'Her' Brains?"
- Revised and updated Science Versus Pseudoscience box, "Brain Myths," includes new research on brain lateralization
- Updated research and new photo in Psych for Your Life: Maximizing Your Brain's Potential



Steve Gschmeissner/Science Source

Nerves and Neurons Are Not the Same
A cross section of a peripheral nerve is shown in this electron micrograph. The nerve is composed of bundles of axons (blue) wrapped in the myelin sheath (yellow). In the peripheral nervous system, myelin is formed by a type of glial cell called *Schwann cells,* shown here as a pinkish coating around the axons.

CHAPTER 3, SENSATION AND PERCEPTION

- Streamlined and updated box on subliminal perception
- Focus on Neuroscience "Vision, Experience, and the Brain" revised and updated with 2015 research
- New photo example of color blindness
- Revised figure clarifying human auditory structures and process of hearing
- Added discussion of cochlear implants, with photo illustration
- Added information about the dangers of noise exposure in everyday life and from personal music players
- New example of how frogs without outer ears detect sound
- New cross-cultural research on the language of smell in non-Western groups
- Revised In Focus box "Do Pheromones Influence Human Behavior?" that includes new 2013 and 2014 research on human chemosignals
- New cross-cultural research on effects of ethnicity and culture on pain perception, illustrated with photo
- Revised and updated Critical Thinking box, "ESP: Can Perception Occur Without Sensation?"
- Added discussion of color constancy, now a boldfaced term
- New In Focus box, "The Dress That Broke the Internet" explains why some people see "The Dress" as blue and black and others as gold and white
- New drawings illustrating the Müller-Lyer illusion and the Shepard Tables illusion
- Dramatic new photos illustrating Gestalt principles of organization, monocular cues, stroboscopic motion, and the moon illusion
- Updated Psych for Your Life, including new research on the effectiveness of acupuncture in pain control

Life in View/Science Source

Restoring Hearing Cochlear implants are electronic devices that are surgically implanted behind the ear. A microphone picks up sounds from the environment, which are converted into electrical impulses that directly stimulate the auditory nerve via electrodes implanted in the cochlea. Cochlear implants do *not* restore normal hearing (Farris-Trimble & others, 2014). However, their use, especially when implanted in early childhood, can allow hearing-impaired individuals to perceive speech and other everyday sounds (Clark & others, 2013; O'Donoghue, 2013).

CHAPTER 4, CONSCIOUSNESS AND ITS VARIATIONS

- Streamlined discussion of circadian rhythms and the suprachiasmatic nucleus
- Updated research on multitasking, including 2014 data on cell phone usage contributing to motor vehicle accidents
- New research and photo on the effects of artificial light, including computer and tablet screens, on circadian rhythms
- Streamlined In Focus box, "What You Really Want to Know About Sleep"
- Updated section, "Why Do We Sleep?"
- New section on "Sleep and Memory Formation"
- Updated, reorganized, and streamlined discussion of "Dreams and Mental Activity During Sleep"
- Condensed Focus on Neuroscience, "The Dreaming Brain"
- Updated information on the perils of driving while drowsy
- Streamlined coverage of sleep disorders and hypnosis
- New photo and caption tells the story of a young woman with narcolepsy
- New coverage of exploding head syndrome
- Updated and condensed Critical Thinking box on theories of hypnosis
- Discussion of meditation updated with new research, including 2015 research on the effects on working memory and attention in U.S. military personnel
- "Drug abuse" has been changed to "Substance Abuse Disorder" and definition has been revised to conform with DSM-5 language; requirement that legal problems be present has been dropped, and requirement that craving be present has been added

- Updated data noting that most overdose deaths are now due to legal prescription drugs rather than illegal drugs
- New photos of emergency medical workers, illustrating the dangers of alcohol abuse, and Cory Monteith, illustrating the dangers of depressant drugs
- The term *opiates* replaced with the more accurate term *opioids*
- Updated 2015 research on the surge in heroin and prescription opioid overdose deaths
- New discussion of e-cigarettes, including photo example
- Updated 2014 research on the therapeutic use of psychedelic drugs and ketamine
- Updated information on the legal use of medical marijuana, including 2014 research on data showing fewer opioid overdose deaths in states with legal access to medical marijuana for pain treatment
- Added 2015 research on long-term mental health effects of psychedelic drug use
- Psych for Your Life section retitled "Overcoming Insomnia"

CHAPTER 5, LEARNING

- New photo examples of learning, Ivan Pavlov, primary and conditioned reinforcers, media response to Skinner's work, superstitious rituals, learned helplessness, applications of operant conditioning, and observational learning
- Streamlined discussion of John B. Watson and introduction to behaviorism
- New contemporary photo example of classical conditioning in advertising
- 2014 research suggesting a second identification for the infant in the famous "Little Albert" study, Albert Barger Martin
- Condensed and simplified presentation of Robert Rescorla's classic research
- Revised section on taste aversions
- Replaced reinforcement example of hitting a vending machine with pushing the coin-return lever
- In text and tables, replaced the terms "punishment by application" and "punishment by removal" with "positive punishment" and "negative punishment"
- Revised graphs showing schedules of reinforcement and response patterns
- New historical photo of Keller and Marian Breland
- Streamlined and updated Focus on Neuroscience, "Mirror Neurons: Imitation in the Brain"
- New 2013 research example of observational learning in animals
- New 2014 research on media effects on behavior, identifying a correlational link between a decrease in teen birth rates and viewership of an MTV reality series showing the struggles of teenage parents
- Revised and updated Critical Thinking Box, "Does Exposure to Media Violence *Cause* Aggressive Behavior?" includes 2015 research on the effects of violent video games

Motivated Forgetting Car accidents, serious illnesses, surgeries, and other traumatic events are painful to relive in memory. Some researchers believe that by voluntarily directing our attention away from memories of such traumatic events, we can eventually *suppress* our memory of the experiences, making them difficult or impossible to consciously retrieve (Anderson & others, 2011).

Taxi/Getty Images

CHAPTER 6, MEMORY

- Revised art demonstrating Baddeley's model of working memory
- New tip-of-the-tongue examples
- Revised discussion of flashbulb memories updated with 2015 research and new photo illustration
- Revised graph showing the Ebbinghaus forgetting curve
- New photo examples of the the interaction of memory stages in everyday life, types of information stored in long-term memory, retrieval cues, culture's effects on early memory, "tip-of-the-fingers" experience, and motivated forgetting

- Updated example of eyewitness misidentification, with new illustration
- New 2013 research, conducted by the online magazine *Slate,* showing how faked news photographs can produce false memories about political events
- New coverage of false confessions includes 2015 research and real-world data from the Innocence Project
- New photo of David Snowden with an elderly participant in the Nun Study of Aging and Alzheimer's Disease
- New photos of Suzanne Corkin, Henry Molaison (the famous "H.M."), and of a virtual model of H.M.'s damaged brain based on new 2014 research
- In Focus box "H.M. and Famous People" eliminated
- Fully revised Psych for Your Life application, "Ten Steps to Boost Your Memory" and new photo of memory superstar and journalist Joshua Foer

CHAPTER 7, THINKING, LANGUAGE, AND INTELLIGENCE

- The new term *autism spectrum disorder* has replaced *autism* and *Asperger's syndrome* in the Prologue and throughout the chapter to conform to the DSM-5 classification
- Critical Thinking box "The Persistence of Unwarranted Beliefs" updated with 2015 research
- Culture and Human Behavior box "The Effect of Language on Perception" updated with 2015 research
- New 2014 research example added to discussion of animal cognition
- The term *intellectual disability* has replaced *mental retardation* in the In Focus box "Neurodiversity: Beyond IQ" to conform to new DSM-5 terminology
- Updated research on problem-solving strategies
- New extended example of functional fixedness—repurposing plastic bags and bottles into useful objects—illustrated with new photo
- Confirmation bias introduced as a boldfaced term
- Updated discussion of practical intelligence
- New photo examples of items that don't match the prototype, decision-making strategies, sign language, and Gardner's theory of multiple intelligences
- Updated discussion of stereotype threat
- New photo example of creativity: Steve Jobs

CHAPTER 8, MOTIVATION AND EMOTION

- New prologue, "One Step, One Breath," about one of the authors' experiences as a volunteer trekking through a remote region of the Himalayas
- Revised, condensed, and streamlined introduction to motivational theories
- New photo examples of sensation seekers, achievement motivation, emotion, arousal and intense emotion, the facial feedback hypothesis, and appraisal and emotion
- Condensed, simplified, and updated section on hunger and eating
- New examples of how culture shapes food choices
- New information about body mass index and alternative measures of obesity
- New data on the role that globalization plays in the increase in obesity in developing countries worldwide
- Updated Critical Thinking box "Has Evolution Programmed Us to Overeat?" including 2014 research on stigma associated with obesity
- 2014 research on the decrease in physical activity levels in the United States over the past decade
- New photo of Masters and Johnson

Sandy Hockenbury

The Many Functions of Emotion
Two friends share news, smiles, and laughter as they patiently wait their turns at the medical clinic in an isolated village in Tsum Valley, Nepal. Emotions play an important role in relationships and social communication.

- Evolution and mate preferences now covered within the main text in Chapter 9, Lifespan Development
- Focus on Neuroscience, "Romantic Love and the Brain" no longer included in chapter
- Revised introduction to "Psychological Needs as Motivators" section
- Updated research on self-determination theory
- New example of achievement motivation
- Updated research on the functions of emotion and emotional intelligence
- Streamlined and updated discussion of the subjective experience of emotion and the neuroscience of emotion, including new photo example
- Gender and emotion now covered within the main text in the retitled section, "Culture, Gender, and Emotional Experience"
- New figure based on 2014 cross-cultural research on the association of different emotions with specific physical sensations
- New photo of William James
- Updated research on cognitive theories of emotion

CHAPTER 9, LIFESPAN DEVELOPMENT

- New prologue about a young transgender man, James, growing up in a small town in rural New York
- Revised introduction, with new discussion of longitudinal and cross-sectional research designs; longitudinal design and cross-sectional design are new key terms
- New photo examples of continuity and change over the lifespan
- New photo of X and Y chromosomes
- Expanded and updated discussion of research on the epigenetic effects of early life stress in human subjects
- New photo and discussion of Harry Harlow's classic "contact comfort" research and its role in attachment
- New photos of Mary Ainsworth and Erik Erikson
- Fully revised section on theories of gender-role development now includes evolutionary and interactionist theories
- New photo examples of gender-stereotyped toys
- Mate preferences now covered here
- New section on gender identity
- New photo examples of cognitive development and Piagetian stages
- Updated statistics on U.S. households, including changes in family structure
- New discussion of the new phenomenon of "boomerang kids"

Challenging Expectations What makes weight lifting a "male" activity? Eleven-year-old weight lifter Charley Craig, the youngest female weight lifter in the United Kingdom, engages in athletic pursuits that many might not expect for a girl. Are biological constraints a factor here?

Laurentiu Garofeanu/Barcroft M/Getty Images

CHAPTER 10, PERSONALITY

- New photo of Carl Jung and streamlined discussion of archetypes
- Streamlined discussion of Freud and his theory drops bolded terms Eros and Thanatos
- Discussion of Alfred Adler's theory of personality updated with new research
- Many new photo examples, including Freud's influence on popular culture, establishing the superego, sublimation, the Oedipus complex, the question of innate good or evil, the TAT, and self-efficacy
- New cross-cultural photo illustration for Critical Thinking box, "Freud Versus Rogers on Human Nature"
- Slightly shortened discussion of the humanistic perspective

- Streamlined and updated Science Versus Pseudoscience box on graphology
- Streamlined Focus on Neuroscience, "The Neuroscience of Personality"
- In Focus box, "Explaining Those Amazing Identical Twin Similarities," dropped from chapter
- Streamlined discussion of self-efficacy with new student-centered example
- New 2014 and 2015 research on the trait perspective
- Section on self-report inventories updated with 2015 research

CHAPTER 11, SOCIAL PSYCHOLOGY

- Discussion of person perception updated with new research on the role of person perception in social media
- New photo example of implicit personality theory
- Streamlined Focus on Neuroscience, "Brain Reward When Making Eye Contact with Attractive People"
- Revised introduction to attribution
- New photo example of blaming the victim—the story of Elizabeth Smart
- Condensed Culture and Human Behavior box, "Explaining Failure and Murder"
- Revised discussion of cognitive dissonance, with new examples and research on cognitive dissonance in preschoolers and capuchin monkeys
- Updated In Focus box, "Interpersonal Attraction and Liking"
- Revised and updated discussion of in-group bias; ethnocentricity no longer a bolded key term
- Updated discussion of implicit attitudes, including 2015 research
- Expanded and updated discussion of prejudice, incorporating new research and neuroscience evidence
- Revised and updated section on Milgram's obedience study, including new discussion of contemporary replication
- Updated and revised Critical Thinking box, "Abuse at Abu Ghraib," including critiques of Zimbardo's study known as the Stanford Prison Experiment
- New section, "Altruism and Aggression," includes expanded coverage of Latané and Darley's research on bystander intervention, additional factors that increase the likelihood of bystanders helping, and entirely new section on aggression
- New figures on aggression and the brain, and the influence of sociocultural factors on aggression
- New photos and captions provide contemporary examples of the self-serving bias, the effect of attitudes on behavior, research linking prejudice and negative emotion, destructive obedience of authority, prosocial behavior, coming to the aid of a stranger, road rage, and the rule of reciprocity

CHAPTER 12, STRESS, HEALTH, AND COPING

- New photo examples of stress and appraisal, uncontrollable events, explanatory style, Type A behavior pattern, and providing social support
- Introduction now includes data from an APA survey on stress in America
- "Sources of Stress" updated with 2013, 2014, and 2015 research
- Streamlined Culture and Human Behavior box
- Introduction to "Physical Effects of Stress" updated with 2014 research
- "Stress, Chromosomes, and Aging" updated with 2014 and 2015 research
- Revised and updated discussion of psychological factors in the response to stressors

Thanasis Zovoilis/Getty Images

Establishing the Superego As children, we learn many rules and values from parents and other authorities. The internalization of such values is what Freud called the superego—the inner voice that is our conscience. When we fail to live up to its moral ideals, the superego imposes feelings of guilt, shame, and inferiority.

- New research example demonstrating the importance of relationships in the ability to deal with stressors
- New prologue example in the In Focus box, "Providing Effective Social Support"
- Streamlined and updated introduction to "Coping"
- Streamlined In Focus box, "Gender Differences in Responding to Stress"
- New cross-cultural photo examples of major life events, daily hassles and stress, daily hassles, the benefits of social support, and problem-focused coping
- Photos of Richard Lazarus and Janice Kiecolt-Glaser dropped

CHAPTER 13, PSYCHOLOGICAL DISORDERS

- New Prologue about the psychotic break and successful life of a woman with schizophrenia—Elyn Saks
- Expanded coverage of the DSM-5, presenting a history of the manual, including critiques
- Sample DSM diagnostic criteria figure dropped
- New coverage of the World Health Organization's *International Classification of Diseases*
- New photo example demonstrates the importance of context in differentiating normal and abnormal behavior
- Critical Thinking box updated with new research on violence and mental illness
- Updated cross-cultural research on prevalence of psychological disorders and treatment rates in developing countries
- Revised Table of Key Diagnostic Categories, incorporating DSM-5 terminology and criteria
- Revised introduction to "Anxiety Disorders," incorporating DSM-5 criteria for posttraumatic stress disorder and obsessive-compulsive disorder
- New evolutionary discussion of phobias
- New phobia example—Oprah Winfrey's fear of chewing gum
- Section on social phobia retitled "Social Anxiety Disorder" to conform to DSM-5 terminology, and criteria updated with new research, including cross-cultural research
- Reorganized and updated sections on postraumatic stress disorder and obsessive-compulsive disorder, incorporating DSM-5 criteria
- New cross-cultural research on posttraumatic stress disorder in children living in the Middle East
- New research on how posttraumatic stress disorder symptoms can be triggered by reports in the news media and by events unrelated to the original trauma
- Updated research on the role played by pre-existing vulnerability in the development of posttraumatic stress disorder
- Section on "Mood Disorders" retitled as "Disordered Moods and Emotions: Depressive Disorder and Bipolar Disorder" to conform to new DSM-5 terminology
- New discussion of DSM-5's controversial removal of "the bereavement exclusion" that excluded symptoms caused by bereavement as criteria for depression
- Updated longitudinal research on the prevalence and recurrence of major depressive disorder over the lifespan
- Section on major depressive disorder updated with new examples and 2014 and 2015 research
- New research on cultural differences related to major depressive disorder
- New example to introduce bipolar disorder
- Updated 2014 and 2015 research on the causes of depressive and bipolar disorders
- Updated Critical Thinking box "Does Smoking Cause Depression and Other Psychological Disorders?" includes revised graph

ilovezion/Shutterstock

John Arnold/Shutterstock

An Evolutionary Fear of Holes Some people are afraid of a certain pattern of holes like those you might see in a chocolate bar, in soap bubbles, or on a lotus seed head like the one shown here. This condition is called trypophobia. Researchers Geoff Cole and Arnold Wilkins (2013) found striking similarities between the visual pattern that triggers fear in trypophobics and the markings on poisonous animals, like certain snakes or the poison dart frog shown here. They speculate that an ability to quickly notice a poisonous creature gave people an evolutionary advantage, even if it sometimes led them to fear harmless objects.

- Revised table of depressive and bipolar disorders, incorporating DSM-5 terminology and criteria
- "Eating Disorders" section expanded and updated to incorporate DSM-5 terminology and criteria, including a new section on the newly described disorder "binge-eating disorder"
- Updated discussion of personality disorders introduces second approach to classification
- New discussion of the differences among the categories *psychopath, sociopath*, and *antisocial personality disorder,* with new photo examples
- Updated research on borderline personality disorder
- Updated 2014 research on the controversy surrounding the authenticity of dissociative identity disorder
- Revised table of dissociative disorders, incorporating DSM-5 terminology and criteria
- Fully revised section on schizophrenia, including new examples, extended coverage of variations of symptoms across cultures, and a cross-cultural look at prevalence
- New photo example of the Truman Show delusion as a culturally-specific symptom of schizophrenia
- New photo examples of people with major depressive disorder, bipolar disorder, and schizophrenia
- Psych for Your Life application on understanding and helping to prevent suicide updated with new statistics

CHAPTER 14, THERAPIES

- Terminology revised throughout to reflect DSM-5 criteria and diagnostic labels
- Streamlined discussion of short-term dynamic therapies
- Discussion of EMDR and exposure therapies moved into main text, in retitled section "Systematic Desensitization and Exposure Therapies"
- Updated 2013 and 2014 research on token economies and contingency management therapies
- Discussion of Albert Ellis's work updated to note "rational-emotive therapy" now renamed "rational-emotive behavior therapy"
- Updated coverage of cognitive therapy
- Updated section "Cognitive-Behavioral Therapy and Mindfulness-Based Therapies," including 2014 research on the use of cognitive-behavioral therapy with clients with schizophrenia to help treat psychotic symptoms
- New In Focus box, "Increasing Access: Meeting the Need for Mental Health Care," introduces the role of paraprofessionals and lay counselors worldwide, plus technology-driven solutions
- Expanded and updated discussion, "Evaluating the Effectiveness of Psychotherapy," includes criteria to evaluate new therapies
- Updated research on antipsychotic medications, including information from the newest edition of the *Primer of Drug Action*
- Updated table on antidepressant medications
- New Critical Thinking box, "Do Antidepressants Work Better Than Placebos?", examines the effectiveness of antidepressants
- New discussions of the experimental use of MDMA to treat anxiety disorders and PTSD and of ketamine to treat major depressive disorder, incorporating 2014 research
- All-new Focus on Neuroscience, "Psychotherapy and the Brain," presents research comparing the effect of antidepressant and psychotherapy treatment on brain activity in people with major depressive disorder
- Updated research on electroconvulsive therapy and new, experimental treatments

JOE SONGER/AL.COM/Landov

Transcranial Magnetic Stimulation
Tammy, an Alabama woman suffering from depression, receives Transcranial Magnetic Stimulation (TMS) under the oversight of a nurse. TMS involves stimulating brain regions with magnetic pulses. Tammy is able to receive this noninvasive treatment in her doctor's office as opposed to in a hospital.

- New photo examples of the varied workplaces of psychologists, Native American healing, transcranial magnetic stimulation, mindfulness-based stress reduction, the stigma associated with psychological problems, and technology-based solutions to expanding access to mental health care

APPENDIX B: INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

- New photo examples of human factors involved in the use of workplace equipment, matching job and applicant, leadership, different work styles, work–life balance, and teleworking

Features of *Discovering Psychology*

For all that is new in the seventh edition, we were careful to maintain the unique elements that have been so well received in the previous editions. Every feature and element in our text was carefully developed and serves a specific purpose. From comprehensive surveys, input from reviewers, and our many discussions with faculty and students, we learned what elements people wanted in a text and why they thought those features were important tools that enhanced the learning process. We also surveyed the research literature on text comprehension, student learning, and memory. In the process, we acquired many valuable insights from the work of cognitive and educational psychologists. Described below are the main features of *Discovering Psychology* and a discussion of how these features enhance the learning process.

Associate the new with the old in some natural and telling way, so that the interest, being shed along from point to point, fully suffuses the entire system of objects. . . . Anecdotes and reminiscences [should] abound in [your] talk; and the shuttle of interest will shoot backward and forward, weaving the new and the old together in a lively and entertaining way.

—William James, Talks to Teachers (1899)

The Narrative Approach

As you'll quickly discover, our book has a very distinctive voice. From the very first page of this text, the reader comes to know us as people and teachers through carefully selected stories and anecdotes. Some of our friends and relatives have also graciously allowed us to share stories about their lives. The stories are quite varied—some are funny, others are dramatic, and some are deeply personal. All of them are true.

The stories we tell reflect one of the most effective teaching methods: the *narrative approach*. In addition to engaging the reader, each story serves as a pedagogical springboard to illustrating important concepts and ideas. Every story is used to connect new ideas, terms, and ways of looking at behavior to information with which the student is already familiar.

Prologues

As part of the narrative approach, every chapter begins with a **Prologue,** a true story about ordinary people with whom most students can readily identify. The Prologue stories range from the experiences of a teenager with Autism Spectrum Disorder to people struggling with the aftereffects of a devastating wildfire to the story of a man who regained his sight after decades of blindness. Each Prologue effectively introduces the chapter's themes and lays the groundwork for explaining why the topics treated by the chapter are important. The Prologue establishes a link between familiar experiences and new information—a key ingredient in facilitating learning. Later in the chapter, we return to the people and stories introduced in the Prologue, further reinforcing the link between familiar experiences and new ways of conceptualizing them.

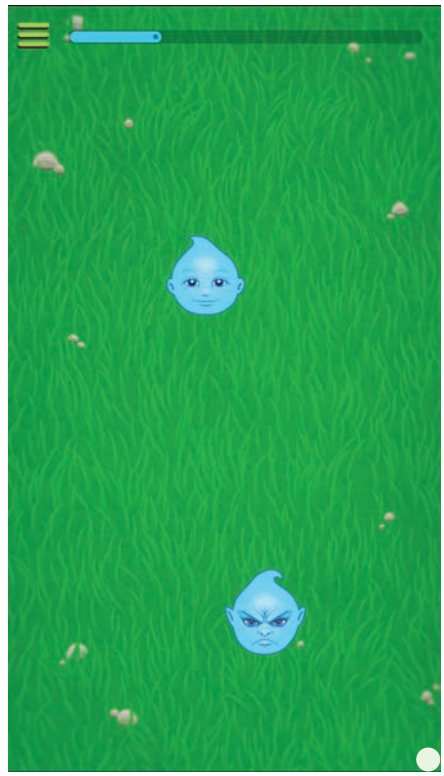
Logical Organization, Continuity, and Clarity

As you read the chapters in *Discovering Psychology,* you'll see that each one tells the story of a major topic in a logical way that flows continually from beginning to end. Themes are clearly established in the first pages of the chapter. Throughout the chapter, we come back to those themes as we present subtopics and specific research

studies. Chapters are thoughtfully organized so that students can easily see how ideas are connected. The writing is carefully paced to maximize student interest and comprehension. Rather than simply mentioning terms and findings, we explain concepts clearly. And we use concrete analogies and everyday examples, rather than vague or flowery metaphors, to help students grasp abstract concepts and ideas.

Paradoxically, one of the ways that we maintain narrative continuity throughout each chapter is through the use of in-text boxes. The boxes provide an opportunity to explore a particular topic in depth without losing the narrative thread of the chapter. The **In Focus** boxes do just that—they focus on interesting topics in more depth than the chapter's organization would allow. These boxes highlight interesting research, answer questions that students commonly ask, or show students how psychological research can be applied in their own lives. The seventh edition of *Discovering Psychology* includes the following In Focus boxes:

- Traumatic Brain Injury: From Concussions to Chronic Traumatic Encephalopathy, p. 54
- Do Pheromones Influence Human Behavior?, p. 103
- The Dress That Broke the Internet, p. 122
- What You Really Want to Know About Sleep, p. 141
- What You Really Want to Know About Dreams, p. 152
- Watson, Classical Conditioning, and Advertising, p. 190
- Evolution, Biological Preparedness, and Conditioned Fears: What Gives You the Creeps?, p. 195
- Changing the Behavior of Others: Alternatives to Punishment, p. 202
- Déjà-Vu Experiences: An Illusion of Memory?, p. 246
- Does a High IQ Score Predict Success in Life?, p. 293
- Neurodiversity: Beyond IQ, p. 298
- Detecting Lies, p. 339
- Hooking Up on Campus, p. 397
- Interpersonal Attraction and Liking, p. 463
- Providing Effective Social Support, p. 521
- Gender Differences in Responding to Stress: "Tend-and-Befriend" or "Fight-or-Flight?," p. 525
- Using Virtual Reality to Treat Phobia and Posttraumatic Stress Disorder, p. 596
- Increasing Access: Meeting the Need for Mental Health Care, p. 606
- Servant Leadership: When It's Not All About You, p. B-10
- Name, Title, Generation, p. B-11



Tracy A. Dennis

An Anxiety-Reducing Game
Psychologists Tracy Dennis and Laura O'Toole (2014) found that playing a video game based on a treatment called *cognitive bias modification* resulted in a decrease in symptoms of anxiety. People earn points when they direct their attention away from anxiety-provoking targets, like the scary cartoon character, and toward the friendly-looking characters.

Scientific Emphasis

Many first-time psychology students walk into the classroom operating on the assumption that psychology is nothing more than common sense or a collection of personal opinions. Clearly, students need to walk away from an introductory psychology course with a solid understanding of the scientific nature of the discipline. To help you achieve that goal, in every chapter we show students how the scientific method has been applied to help answer different kinds of questions about behavior and mental processes.

Because we carefully guide students through the details of specific experiments and studies, they develop a solid understanding of how scientific evidence is gathered and the interplay between theory and research. And because we rely on original rather than secondary sources, students get an accurate presentation of both classic and contemporary psychological studies.

One unique way that we highlight the scientific method in *Discovering Psychology* is with our trademark **Science Versus Pseudoscience** boxes. In these boxes, students see the importance of subjecting various claims to the standards of scientific evidence.

These boxes promote and encourage scientific thinking by focusing on topics that students frequently ask about in class. The seventh edition of *Discovering Psychology* includes the following Science Versus Pseudoscience boxes:

- What Is a Pseudoscience?, pp. 20-21
- Phrenology: The Bumpy Road to Scientific Progress, p. 61
- Brain Myths, p. 77
- Subliminal Perception, p. 89
- Can a DVD Program Your Baby to Be a Genius?, pp. 372-373
- Graphology: The "Write" Way to Assess Personality?, p. 443

Critical Thinking Emphasis

Nichole Sobecki/AFP/Getty Images

Are People Innately Good . . . or Innately Evil? A member of Doctors Without Borders administers polio vaccines to children who are among the tens of thousands of refugees fleeing civil war in South Sudan. Doctors Without Borders is an international group of medical workers that won the Nobel Peace Prize for its work in helping the victims of violence and disasters all over the world. On the one hand, violence motivated by political or ethnic hatred seems to support Freud's contentions about human nature. On the other hand, the selfless behavior of those who help others, often at a considerable cost to themselves, seems to support Rogers's view. Which viewpoint do you think more accurately describes the essence of human nature?

Another important goal of *Discovering Psychology* is to encourage the development of critical thinking skills. To that end, we do not present psychology as a series of terms, definitions, and facts to be skimmed and memorized. Rather, we try to give students an understanding of how particular topics evolve. In doing so, we also demonstrate the process of challenging preconceptions, evaluating evidence, and revising theories based on new evidence. In short, every chapter shows the process of psychological research—and the important role played by critical thinking in that enterprise.

Because we do not shrink from discussing the implications of psychological findings, students come to understand that many important issues in contemporary psychology are far from being settled. Even when research results are consistent, how to interpret those results can sometimes be the subject of considerable debate. As the authors of the text, we very deliberately try to be evenhanded and fair in presenting both sides of controversial issues. In encouraging students to join these debates, we often challenge them to be aware of how their own preconceptions and opinions can shape their evaluation of the evidence.

Beyond discussions in the text proper, every chapter includes one or more **Critical Thinking** boxes. These boxes are carefully designed to encourage students to think about the broader implications of psychological research—to strengthen and refine their critical thinking skills by developing their own positions on questions and issues that don't always have simple answers. Each Critical Thinking box ends with two or three questions that you can use as a written assignment or for classroom discussion. The seventh edition of *Discovering Psychology* includes the following Critical Thinking boxes:

- How to Think Like a Scientist, p. 31
- "His" and "Her" Brains?, p. 72
- ESP: Can Perception Occur Without Sensation?, p. 112
- Is Hypnosis a Special State of Consciousness?, pp. 158–159
- Is Human Freedom Just an Illusion?, p. 204
- Does Exposure to Media Violence *Cause* Aggressive Behavior?, p. 219
- The Memory Wars: Recovered or False Memories?, pp. 254–255
- The Persistence of Unwarranted Beliefs, pp. 284–285
- Has Evolution Programmed Us to Overeat?, p. 322
- Emotion in Nonhuman Animals: Laughing Rats, Silly Elephants, and Smiling Dolphins?, pp. 344–345
- The Effects of Child Care on Attachment and Development, p. 401
- Freud Versus Rogers on Human Nature, p. 430
- Abuse at Abu Ghraib: Why Do Ordinary People Commit Evil Acts?, pp. 480– 481
- Do Personality Factors Cause Disease?, p. 518
- Are People with a Mental Illness as Violent as the Media Portray Them?, pp. 536–537
- Does Smoking Cause Major Depressive Disorder and Other Psychological Disorders?, pp. 556–557
- Do Antidepressants Work Better Than Placebos?, pp. 622–623

Cultural Coverage

As you can see in Table 1, we weave cultural coverage throughout many discussions in the text. But because students are usually unfamiliar with cross-cultural psychology, we also highlight specific topics in **Culture and Human Behavior** boxes. These boxes increase student awareness of the importance of culture in many areas of human experience. They are unique in that they go beyond simply describing

TABLE 1

Integrated Cultural Coverage

In addition to the topics covered in the Culture and Human Behavior boxes, cultural influences are addressed in the following discussions.

Page(s)	Topic	Page(s)	Topic
11–13	Cross-cultural perspective in contemporary psychology	305–306	Cross-cultural studies of group discrimination and IQ
11–13	Culture, social loafing, and social striving	307	Role of culture in tests and test-taking behavior
53	Effect of traditional Chinese acupuncture on endorphins	317–318	Culture's effect on food preference and eating behavior
102	Cross-cultural research on the language of smell in non-Western groups	321	Role of globalization in the increase of obesity in developing countries worldwide
108	Cross-cultural research on effects of ethnicity and culture on pain perception	322	Rates of sedentary lifestyles worldwide
127–128	Use of acupuncture in traditional Chinese medicine for pain relief	323	Obesity rates in cultures with different levels of economic development
160–162	Meditation in different cultures	335	Culture and achievement motivation
162	Research collaboration between Tibetan Buddhist monks and Western neuroscientists	337	Culturally universal emotions
165	Racial and ethnic differences in drug metabolism rate	337–338	Culture and emotional experience
173	Peyote use in religious ceremonies in other cultures	337–338	Cross-cultural research on gender and emotional expressiveness
174	Medicinal use of marijuana in ancient China, Egypt, India, Greece, and other countries	340	Cross-cultural studies of psychological arousal associated with emotions
175	Rave culture and drug use in Great Britain and Europe	340	Cross-cultural research on association of different emotions with different physical sensations
204	Clash of B. F. Skinner's philosophy with American cultural ideals and individualistic orientation	346	Universal facial expressions
218–220	Cross-cultural application of observational learning principles in entertainment-education programming in Mexico, Latin America, Asia, and Africa	344–346	Culture, cultural display rules, and emotional expression
240	Cross-cultural research on the tip-of-the-tongue phenomenon	368	Cross-cultural research on co-sleeping
287	Spontaneous development of sign languages in a Nicaraguan school and a Bedouin village as cross-cultural evidence of innate human predisposition to develop language	369	Cultural influences on temperament
288	Estimated rate of bilingualism worldwide	370	Cross-cultural studies of attachment
292	Historical misuse of IQ tests to evaluate immigrants	371	Native language and infant language development
292	Wechsler's recognition of the importance of culture and ethnicity in developing the WAIS intelligence test	371	Cross-cultural research on infant-directed speech
296–297	Role of culture in Gardner's definition and theory of intelligence	371	Culture and patterns of language development
297, 300	Role of culture in Sternberg's definition and theory of intelligence	378	Cross-cultural research on mate preferences
303–304	IQ and cross-cultural comparison of educational differences	385	Influence of culture on cognitive development
304–305	Rapid gains in IQ scores in different nations	391	Cultural influences on timing of adolescent romantic relationships

Page(s)	Topic	Page(s)	Topic
395	Culture and moral reasoning	516-517	Cross-cultural research on the effect of expressing positive and negative emotions
402	Data on aging in the world population	526–527	Effect of culture on coping strategies
408	Cultural differences in the effectiveness of different parenting styles	535	Role of culture in distinguishing between normal and abnormal behavior
415–416	Freud's impact on Western culture	536	Description of the World Health Organization's *International Classification of Diseases*
416–417	Cultural influences on Freud's psychoanalytic theory	538–539	Global rates of mental illness
424–425	Cultural influences on Jung's personality theory	539	Cultural differences in rates of mental health treatment
425	Jung on archetypal images, including mandalas, in different cultures	543	Cultural variants of panic disorder
425–426	Cultural influences on the development of Horney's personality theory	544	*Taijin kyofusho*, a culture-specific disorder related to social phobia
430	Rogers on cultural factors in the development of antisocial behavior	546–547	PTSD in children living in a war zone in the Middle East and in child soldiers in Uganda and Congo
435–436	Findings from a German study on the tendency to describe others in terms of traits	548–549	Cultural influences in obsessions and compulsions
438	Cross-cultural research on the universality of the five-factor model of personality	552	Cultural differences related to major depressive disorder
457–458	Cultural conditioning and the "what is beautiful is good" myth	560–561	Culture-bound syndromes
460	Attributional biases in individualistic versus collectivistic cultures	561	Western cultural ideals of beauty and prevalence rates of eating disorders
463	Cultural differences in interpersonal attraction	565	Cultural differences in rates of borderline personality disorder
466–469	Stereotypes, prejudice, and group identity	566	Role of culture in dissociative experiences
469–470	Use of IAT to study social preferences and stereotypes worldwide	570–573	Cultural variations in schizophrenia symptoms
471	Application of lessons from Robbers Cave and jigsaw classroom to reduce prejudice and conflict among ethnic and religious groups worldwide	573	Prevalence and differences in outcome of schizophrenia in different cultures
479	Cross-cultural comparisons of destructive social influence	578–579	Findings from the Finnish Adoptive Family Study of Schizophrenia
480–481	Role of cultural differences in abuse at Abu Ghraib prison in Iraq	590	Use of interpersonal therapy to treat depression in Uganda
489–490	Culture and aggression	606–607	Mechanisms for increasing access to mental health care worldwide
501	Cross-cultural research on life events and stress	612–613	Impact of cultural differences on effectiveness of psychotherapy
505–506	Cultural differences as source of stress	614–615	Efficacy of traditional herbal treatment for psychotic symptoms in India
514	Cross-cultural research on the benefits of perceived control		

cultural differences in behavior. They show students how cultural influences shape behavior and attitudes, including the students' own behavior and attitudes. The seventh edition of *Discovering Psychology* includes the following Culture and Human Behavior boxes:

- What Is Cross-Cultural Psychology?, p. 12
- Ways of Seeing: Culture and Top-Down Processes, p. 115
- Culture and the Müller-Lyer Illusion: The Carpentered-World Hypothesis, p. 126
- Culture's Effects on Early Memories, p. 237

- The Effect of Language on Perception, pp. 286-287
- Performing with a Threat in the Air: How Stereotypes Undermine Performance, pp. 304–305
- Where Does the Baby Sleep?, p. 368
- Explaining Failure and Murder: Culture and Attributional Biases, p. 460
- The Stress of Adapting to a New Culture, p. 506
- Culture-Bound Syndromes, pp. 560–561
- Cultural Values and Psychotherapy, p. 613

Gender Coverage

Gender influences and gender differences are described in many chapters. Table 2 on the following page shows the integrated coverage of gender-related issues and topics in *Discovering Psychology*. To help identify the contributions made by female researchers, the full names of researchers are provided in the References section at the end of the text. When researchers are identified using initials instead of first names (as APA style recommends), many students automatically assume that the researchers are male.

Neuroscience Coverage

Psychology and neuroscience have become intricately intertwined. Especially in the last decade, the scientific understanding of the brain and its relation to human behavior has grown dramatically. The imaging techniques of brain science—PET scans, MRIs, and functional MRIs—have become familiar terminology to many students, even if they don't completely understand the differences between them. To reflect that growing trend, we have increased our neuroscience coverage to show students how understanding the brain can help explain the complete range of human behavior, from the ordinary to the severely disturbed. Each chapter contains one or more **Focus on Neuroscience** discussions that are designed to complement the broader chapter discussion. Here is a complete list of the Focus on Neuroscience features in the seventh edition:

Tom Barrick, Chris Clark, SGHMS/Science Source

- Psychological Research Using Brain Imaging, pp. 32–33
- Mapping the Pathways of the Brain, p. 62
- Juggling and Brain Plasticity, p. 63
- Vision, Experience, and the Brain, p. 95
- The Sleep-Deprived Emotional Brain, p. 146
- The Dreaming Brain, p. 148
- Meditation and the Brain, p. 163
- The Addicted Brain: Diminishing Rewards, p. 166
- How Methamphetamines Erode the Brain, p. 173
- Mirror Neurons: Imitation in the Brain, p. 217
- Assembling Memories: Echoes and Reflections of Perception, p. 258
- Mapping Brain Changes in Alzheimer's Disease, p. 264
- Seeing Faces and Places in the Mind's Eye, p. 274
- Dopamine Receptors and Obesity, p. 324
- Emotions and the Brain, p. 342
- The Adolescent Brain: A Work in Progress, p. 388
- Boosting the Aging Brain, p. 404
- The Neuroscience of Personality: Brain Structure and the Big Five, p. 440
- Brain Reward When Making Eye Contact with Attractive People, p. 458
- The Mysterious Placebo Effect, p. 512
- The Hallucinating Brain, p. 570

TABLE 2

Integrated Gender Coverage

Page(s)	Topic	Page(s)	Topic
4	Titchener's inclusion of female graduate students in his psychology program in the late 1800s	399	Gender differences in single-parent, head-of-household status
6	Contributions of Mary Whiton Calkins to psychology	400, 402	Gender and patterns of career development and parenting responsibilities
6–7	Contributions of Margaret Floy Washburn to psychology	402	Gender differences in life expectancy
60	Endocrine system and effects of sex hormones	422–423	Freud's contention of gender differences in resolving the Oedipus complex
72	Sex differences and the brain	425–426	Horney's critique of Freud's view of female psychosexual development
97	Gender differences in incidence of color blindness	428	Critique of sexism in Freud's theory
103	Gender differences in responses to human chemosignals (pheromones)	463	Gender similarities and differences in interpersonal attraction
108	Gender differences in the perception of pain	466–467	Misleading effect of gender stereotypes
148–149	Gender differences in dream content	476	Gender similarities in results of Milgram's obedience studies
149	Gender and nightmare frequency	489–490	Gender and aggression
153	Gender differences in incidence of obstructive sleep apnea	503–504	Gender differences in frequency and source of daily hassles
167	Gender and rate of metabolism of alcohol	520–522	Gender differences in providing social support and effects of social support
167	Gender and binge drinking among college students	522	Gender differences in susceptibility to the stress contagion effect
184	Women as research assistants in Pavlov's laboratories	525	Gender differences in responding to stress—the "tend-and-befriend" response
304–305	Test performance and the influence of gender stereotypes	537	Gender bias as one critique of DSM-5
322	Gender differences in sedentary lifestyles	541	Gender differences in prevalence of anxiety, posttraumatic stress, and obsessive-compulsive disorders
323	Gender differences in metabolism	544	Gender differences in prevalence of specific phobias
325	Sex differences in the pattern of human sexual response	544	Gender differences in prevalence of social anxiety disorder
326–327	Sex differences in hormonal influences on sexual motivation	546	Gender differences in prevalence of posttraumatic stress disorder
328	Gender differences in reported rates of homosexual behavior	551	Gender differences in prevalence of seasonal affective disorder
338	Gender similarities and differences in experience and expression of emotion	552	Gender differences in prevalence of major depressive disorder
361	Sex differences in genetic transmission of recessive characteristics	554	Lack of gender differences in prevalence of bipolar disorder
374	Definitions of gender and gender role	559	Gender differences in effect of malnutrition caused by anorexia
374–376	Gender differences in childhood behavior	560	Gender differences in prevalence of *hikikomori*
376–379	Theories of gender-role development	561	Gender differences in prevalence of eating disorders
379–380	Gender identity	564	Gender differences in incidence of antisocial personality disorder
386–387	Gender differences in timing of the development of primary and secondary sex characteristics	565	Gender differences in incidence of borderline personality disorder
388–389	Gender and accelerated puberty in father-absent homes	575	Paternal age and incidence of schizophrenia
389–390	Gender differences in effects of early and late maturation	579	Gender differences in number of suicide attempts and in number of suicide deaths
395	Gender differences in moral reasoning	627	Gender differences in sexual contact between therapists and clients
396–398	Average age of first marriage and higher education attainment	B–12	Gender differences in reasons for wanting to telecommute
398–399	Gender differences in response to end of reproductive capabilities		

- Schizophrenia: A Wildfire in the Brain, p. 577
- Psychotherapy and the Brain, p. 621

Psych for Your Life

Among all the sciences, psychology is unique in the degree to which it speaks to our daily lives and applies to everyday problems and concerns. The **Psych for Your Life** feature at the end of each chapter presents the findings from psychological research that address a wide variety of problems and concerns. In each of these features, we present research-based information in a form that students can use to enhance everyday functioning. As you can see in the following list, topics range from improving self-control to overcoming insomnia:

- Successful Study Techniques, pp. 35–37
- Maximizing Your Brain's Potential, pp. 79–81
- Strategies to Control Pain, pp. 127–129
- Overcoming Insomnia, pp. 176–177
- Using Learning Principles to Improve Your Self-Control, pp. 221–222
- Ten Steps to Boost Your Memory, pp. 265–267
- A Workshop on Creativity, pp. 308–309
- Turning Your Goals into Reality, pp. 351–353
- Raising Psychologically Healthy Children, pp. 407–408
- Possible Selves: Imagine the Possibilities, pp. 447–449
- The Persuasion Game, pp. 491–492
- Minimizing the Effects of Stress, pp. 527–529
- Understanding and Helping to Prevent Suicide, pp. 579–581
- What to Expect in Psychotherapy, pp. 625–627

Merijin Doomernik/Hollandse Hoogte/Redux

Memory Superstar Joshua Foer
Journalist Joshua Foer (2011) visited a memory competition expecting to find people with special memory abilities. Instead, he encountered a group of "mental athletes"—people with ordinary minds who had trained their memories to accomplish incredible feats, such as reciting hundreds of random digits or pages of poetry. Told that anyone could develop an expert memory with training, he set out to prove it and devoted months to training his own memory. A year later, he won the USA Memory Championship and even set a new U.S. record by memorizing the position of a deck of cards in one minute, 40 seconds. Joshua's secret? Mnemonic techniques, like the method of loci—and lots and lots of practice. Foer explains his method in his Ted Talk, available at http://www.ted.com/talks/joshua_foer_feats_of_memory_anyone_can_do

The Pedagogical System

The pedagogical system in *Discovering Psychology* was carefully designed to help students identify important information, test for retention, and learn how to learn. It is easily adaptable to an SQ3R approach, for those instructors who have had success with that technique. As described in the following discussion, the different elements of this text form a pedagogical system that is very student-friendly, straightforward, and effective.

We've found that it appeals to diverse students with varying academic and study skills, enhancing the learning process without being gimmicky or condescending. A special student preface titled **To the Student** on pages xlviii to li, immediately before Chapter 1, describes the complete pedagogical system and demonstrates how students can make the most of it.

The pedagogical system has four main components: (1) Advance Organizers, (2) Chapter Reviews, (3) Concept Maps, and (4) LaunchPad for *Discovering Psychology,* Seventh Edition. (You'll learn more about the many features available in LaunchPad in the next section, "Multimedia to Support Teaching and Learning.") Major sections are introduced by an **Advance Organizer** that identifies the section's *Key Theme* followed by a bulleted list of *Key Questions*. Each Advance Organizer mentally primes the student for the important information that is to follow and does so in a way that encourages active learning. Students often struggle with trying to determine what's important to learn in a particular section or chapter. As a pedagogical technique, the Advance Organizer provides a guide that directs the student toward the most important ideas, concepts, and information in the section. It helps students identify main ideas and distinguish them from supporting evidence and examples.

Several other in-chapter pedagogical aids support the Advance Organizers. A clearly identified **Chapter Outline** provides an overview of topics and organization. Within the chapter, **key terms** are set in boldface type and defined in the margin. *Pronunciation guides* are included for difficult or unfamiliar words. Because students often have trouble identifying the most important theorists and researchers, names of **key people** are set in boldface type within the chapter. The **Chapter Review** provides a page-referenced list of key people and key terms at the end of each chapter.

Concept Maps are visual reviews that encourage students to review and check their learning at the end of the chapter. The hierarchical layout shows how themes, concepts, and facts are related to one another. Chapter photos are included as visual cues to important chapter information.

Multimedia to Support Teaching and Learning

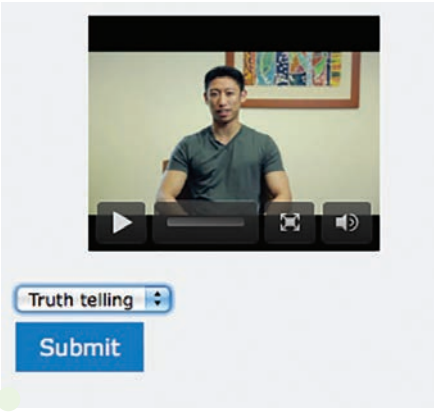
LaunchPad with LearningCurve Quizzing

A comprehensive Web resource for teaching and learning psychology, LaunchPad combines Worth Publishers' awarding-winning media with an innovative platform for easy navigation. For students, it is the ultimate online study guide with rich interactive tutorials, videos, e-Book, and the LearningCurve adaptive quizzing system. For instructors, LaunchPad is a full-course space where class documents can be posted, quizzes are easily assigned and graded, and students' progress can be assessed and recorded. Whether you are looking for the most effective study tools or a robust platform for an online course, LaunchPad is a powerful way to enhance your class. You can preview LaunchPad to accompany *Discovering Psychology* at **launchpadworks.com**

Discovering Psychology and LaunchPad can be ordered together with LP ISBN-10: 1-4641-7692-2
LP ISBN-13: 978-1-4641-7692-0

LaunchPad for *Discovering Psychology* includes all the following resources:

- The **LearningCurve** quizzing system was designed based on the latest findings from learning and memory research. It combines adaptive question selection, immediate and valuable feedback, and a game-like interface to engage students in a learning experience that is unique to them. Each LearningCurve quiz is fully integrated with other resources in LaunchPad through the Personalized Study Plan, so students will be able to review with Worth's extensive library of videos and activities. And state-of-the-art question-analysis reports allow instructors to track the progress of individual students as well as their class as a whole.
- The **interactive e-Book** allows students to highlight and bookmark the text, and to make their own notes, just as they would with a consumable printed textbook.
- **Think Like a Scientist** Immersive Learning Activities, authored by Susan Nolan and Sandy Hockenbury, place students in real-world scenarios, asking them to think critically about scientific claims in the world around them. These active learning exercises combine video, audio, text, games, and assessment to help students hone and develop the scientific literacy skills they will use well beyond the introductory course.
- **Concept Practice,** created by award-winning multimedia author Thomas Ludwig (Hope College), helps students solidify their understanding of key concepts. With these in-depth tutorials, students explore a variety of important topics, often in an experimental context in the role of either researcher or subject. Tutorials combine animations, video, illustrations, and self-assessment.



Think Like a Scientist: Lie Detection
Can you learn to tell if someone is lying? In the *Think Like a Scientist* feature for Chapter 8, students will watch videos and decide whether people are lying or telling the truth. It's an engaging activity that invites students to think critically about the claims and the research on lie detection.

- **PsychSim 6.0,** thoroughly re-imagined and retooled for the mobile web, is the new release of *PsychSim* by Thomas Ludwig (Hope College), using interactive videos, charts, and simulations to immerse students in the world of psychological research and placing them in the role of scientist or subject in activities that highlight important concepts, processes, and experimental approaches.
- **Video Activities** include more than 100 engaging video modules that instructors can easily assign and customize for student assessment. Videos cover classic experiments, current news footage, and cutting-edge research, all of which are sure to spark discussion and encourage critical thinking.
- **Labs** offer interactive experiences that fortify the most important concepts and content of introductory psychology. In these activities, students participate in classic and contemporary experiments, generating real data and reviewing the broader implications of those findings. A virtual host makes this a truly interactive experience.
- The ***Scientific American*** **News Feed** delivers weekly articles, podcasts, and news briefs on the very latest developments in psychology from the first name in popular science journalism.
- **Deep Integration** is available between LaunchPad products and Blackboard, Brightspace by D2L, Canvas, and Moodle. These deep integrations offer educators single sign-on and Gradebook sync now with auto-refresh. Also, these best-in-class integrations offer deep linking to all Macmillan digital content at the chapter and asset level, giving professors ultimate flexibility and customization capability within their LMS.

Instructor Supplements, Videos, and Presentation Resources

- The **Downloadable Instructor's Resource Manual** was prepared by Heather Jennings of Mercer County Community College, and revised by Matthew Isaak of University of Louisiana at Lafayette, with past contributions from Edna Ross, University of Louisville; Skip Pollock, Mesa Community College; Claudia Cochran-Miller, El Paso Community College; Beth Finders, St. Charles Community College; Beverly Drinnin, Des Moines Area Community College; Wayne Hall, San Jacinto College—Central Campus; Nancy Melucci, Los Angeles Community College District; Paul DeMarco, University of Louisville; Julie Gurner, Community College of Philadelphia; Anne McCrea, Sinclair Community College; and Rachel Rogers, Community College of Rhode Island. Arranged topically rather than by chapter for this edition, the Downloadable Instructor's Resource Manual includes an abundance of materials to aid instructors in planning their courses, including classroom demonstrations and activities, student exercises, advice on teaching the nontraditional student, popular video suggestions, and "Psychology in the News" topics. The lecture guides contain chapter objectives and outlines and suggestions on how to approach your lecture.
- The **Downloadable Diploma Test Bank** was written by Don and Sandra Hockenbury with the assistance of Cornelius Rea. This edition's test bank was expertly revised by Sara Harris, Illinois State University. This enhanced Test Bank includes over 6,000 multiple-choice, true-false, and short-answer essay questions, plus Learning Objectives for each chapter that correspond to those in the Instructor's Resource Manual. Questions have also been keyed to several APA guidelines and learning outcomes for the undergraduate psychology major. Available for both Windows and Macintosh, the Test Bank files can be downloaded at **macmillanhighered.com/Catalog/product/discoveringpsychology-seventhedition-hockenbury/instructorresources#tab**

  Diploma is versatile dual-platform test-generating software that allows instructors to edit, add, or scramble questions from the *Discovering Psychology,* Seventh Edition, Test Bank and to format tests, drag and drop questions to create quizzes quickly and easily, and then print them for an exam. The computerized Test Bank

will also allow instructors to export into a variety of formats that are compatible with many Internet-based testing products. For more information on Diploma, please visit Blackboard's Web site: **https://blackboard.secure.force.com**

- Interactive Presentation Slides are another great way to introduce Worth's dynamic media into the classroom without lots of advance preparation. Each presentation covers a major topic in psychology and integrates Worth's high-quality videos and animations for an engaging teaching and learning experience. These interactive presentations are complementary to adopters of Discovering Psychology and are perfect for technology novices and experts alike.
- The **Video Anthology for Introductory Psychology** includes over 150 unique video clips to bring lectures to life. Provided free of charge to adopters of *Discovering Psychology,* this rich collection includes clinical footage, interviews, animations, and news segments that vividly illustrate topics across the psychology curriculum.
- The **i>Clicker Classroom Response System** is a versatile polling system developed by educators and for educators that makes class time more efficient and interactive. i>Clicker allows you to ask questions and instantly record your students' responses, take attendance, and gauge students' understanding and opinions. i>Clicker is available at a 10% discount when packaged with *Discovering Psychology.*

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Perhaps the greatest unsung heroes in college textbook publishing are the supplements and media editors. At Worth Publishers, those editors work tirelessly to set the standard by which all other publishers are judged. With conscientious attention to a multitude of details, media editors Lauren Samuelson, Laura Burden, and Jessica Lauffer have expertly assembled the integrated program of print, video, and Internet supplements that accompanies our text. Lauren also coordinated the development of the *Think Like a Scientist* Immersive Learning Activities with creativity, expertise, and enthusiasm.

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An Invitation

We hope that you will let us know how you and your students like the seventh edition of *Discovering Psychology.* And, as always, we welcome your thoughts, comments, and suggestions. You can write to us in care of Worth Publishers/Macmillan, One New York Plaza, Suite 4500, New York, NY 10004-1562, or contact us via e-mail at **Hockenbury.Psychology@gmail.com.**

Above all, we hope that your class is an enjoyable and successful one as you introduce your students to the most fascinating and personally relevant science that exists.

TO THE STUDENT

Learning from *Discovering Psychology*

Welcome to psychology! Our names are **Sandy Hockenbury, Susan Nolan,** and **Don Hockenbury**, and we're the authors of your textbook. Every semester, we teach several sections of introductory psychology. We wrote this text to help you succeed in the class you are taking. Every aspect of this book has been carefully designed to help you get the most out of your introductory psychology course. Before you begin reading, you will find it well worth your time to take a few minutes to familiarize yourself with the special features and learning aids in this book.

Learning Aids in the Text

KEY THEME

You can enhance your chances for success in psychology by using the learning aids that have been built in to this textbook.

KEY QUESTIONS

- What are the functions of the Prologue, "Myth or Science?" questions, Advance Organizers, Key Terms, Key People, and Concept Maps?
- What are the functions of the different types of boxes in this text, and why should you read them?
- Where can you go to access a virtual study guide at any time of the day or night, and what study aids are provided?

First, read and think about the "Myth or Science?" questions at the beginning of each chapter. These questions reflect common ideas about some of the topics we'll cover. How many of these statements have you heard before? In the course of reading the chapter you'll find out which statements are popular myths—and which are actually true and based on scientific evidence.

Next, take a look at the **Chapter Outline** at the beginning of each chapter. The Chapter Outline provides an overview of the main topics that will be covered in the chapter. You might also want to flip through the chapter and browse a bit so you have an idea of what's to come.

Then, read the chapter **Prologue.** The Prologues are true stories about real people. Some of the stories are humorous, some dramatic. We think you will enjoy this special feature, but it will also help you to understand the material in the chapter that follows and why the topics are important and relevant to your life. In each chapter, we return to the people and stories introduced in the Prologue to illustrate important themes and concepts.

As you begin reading the chapter, you will notice several special elements. **Major Sections** are easy to identify because the heading is in blue type. The beginning of each major section also includes an **Advance Organizer**—a short section preview that looks like the one above.

The **Key Theme** provides you with a preview of the material in the section to come. The **Key Questions** will help you focus on some of the most important material in the section. Keep the questions in mind as you read the section. They will help you identify important points in the chapter. After you finish reading each section, look again at the Advance Organizer. Make sure that you can confidently answer each question before you go on to the next section. If you want to maximize your understanding of the material, write out the answer to each question. You can also use the questions in the Advance Organizer to aid you in taking notes or in outlining chapter sections, both of which are effective study strategies.

Photograph: Gene Fischer "James, Teen Shelter", 2013 www.genefischer.com

James A young man living in a rural area in upstate New York, James is an avid gardener, writer, and artist. He's a volunteer and an activist in his community. He's also transgender. James wants people to realize that there are many parts of his identity as a person. He told your author Susan that people "shouldn't really be focused on this term transgender because a lot of people seem to stick us in a category." He wants people to see beyond the label and get to know him as a person.

Notice that some terms in the chapter are printed in **boldface,** or darker, type. Some of these key terms may already be familiar to you, but most will be new. The darker type signals that the term has a specialized meaning in psychology. Each key term is formally defined within a sentence or two of being introduced. The key terms are also defined in the margins, usually on the page on which they appear in the text. Some key terms include a **pronunciation guide** to help you say the word correctly.

Occasionally, we print words in *italic type* to signal either that they are boldfaced terms in another chapter or that they are specialized terms in psychology.

Certain names also appear in boldface type. These are the **key people**—the researchers or theorists who are especially important within a given area of psychological study. Typically, key people are the psychologists or other researchers whose names your instructor will expect you to know.

You'll also notice notations at the end of major sections inviting you to › Test your understanding with ***LEARNING***Curve. This notation signals that the material you have just finished reading is covered by a comprehensive quiz in LaunchPad. (You can find instructions on how to access LaunchPad in the section titled "LaunchPad for *Discovering Psychology,* Seventh Edition" on the next page.)

In the margins of every chapter, you will find callouts directing you to LaunchPad activities. Some of these LaunchPad activities expand upon topics introduced in the text, while others will help you review and better comprehend the text's information. Many of the activities incorporate video footage or simulations, but all of them were chosen for their relevance to the chapter material.

Also in LaunchPad are the **Think Like a Scientist** Immersive Learning Activities. These activities were created by your authors to help you develop your scientific thinking skills. This special feature provides an interactive, fun, and interesting activity to apply what you've learned to a new topic or claim. Whenever you see a *Think Like a Scientist* callout in the margin of your textbook, check out the activity to explore questions like "Can you learn to tell when someone is lying?" and "Do you have psychic powers?"

LaunchPad

Worth Publishers

Think you're good at paying attention? Try **Video Activity: Attention.**

Can you learn to tell when someone is lying? Go to LaunchPad: Resources to **Think Like a Scientist** about **Lie Detection.**

LaunchPad

Reviewing for Examinations

The **Chapter Review** at the end of each chapter includes several elements to help you review what you have learned. All the chapter's **key people** and **key terms** are listed, along with the pages on which they appear and are defined. The key terms are also boldfaced in the chapter summary so you can see their use in context. You can check your knowledge of the key people by describing in your own words why each scientist is important. You will also want to define each key term in your own words, then compare your definition to information on the page where it is discussed. The visual **Concept Maps** at the end of the chapter give you a hierarchical layout showing how themes, concepts, and facts are related to one another. The photos in each Concept Map should provide additional visual cues to help you consolidate your memory of important chapter information. Use the visual Concept Maps to review the information in each section.

Special Features in the Text

Each chapter in *Discovering Psychology* has several boxes that focus on different kinds of topics. Take the time to read the boxes because they are an integral part of each chapter. They also present important information that you may be expected to know for class discussion or tests. There are five types of boxes:

- **Critical Thinking** boxes ask you to stretch your mind a bit by presenting issues that are provocative or controversial. They will help you actively question the implications of the material that you are learning.

- **Science Versus Pseudoscience** boxes examine the evidence for various popular pseudosciences—from subliminal persuasion to *Baby Einstein* videos and graphology. These discussions will help teach you how to think scientifically and to critically evaluate claims in many different fields—not just psychology.
- **Culture and Human Behavior** boxes are another special feature of this text. Many students are unaware of the importance of cross-cultural research in contemporary psychology. These boxes highlight cultural differences in thinking and behavior. They will also sensitize you to the ways in which people's behavior, including your own, has been influenced by cultural factors.
- **In Focus** boxes present interesting information or research. Think of them as sidebar discussions. They deal with topics as diverse as human pheromones, whether animals dream, and why snakes and spiders give so many people the creeps.
- **Focus on Neuroscience** sections provide clear explanations of intriguing studies that use brain-imaging techniques to study psychological processes. Among the topics that are highlighted: schizophrenic hallucinations, mental images, drug addiction, and romantic love and the brain.

The **Psych for Your Life** section at the end of each chapter provides specific suggestions to help apply chapter information to help you deal with real-life concerns. These suggestions are based on psychological research, rather than opinions, anecdotes, or pop psych self-help philosophies.

Especially important is the Psych for Your Life section at the end of Chapter 1, which provides a list of research-based study techniques that you can use to help you succeed in psychology and other courses as well. In addition, the Psych for Your Life sections for Chapters 5, 6, and 8 deal with setting and achieving goals and enhancing motivation and memory, so you may want to skip ahead and read them after you finish this To the Student section. We hope that all of the Psych for Your Life sections make a difference in your life.

There are two special appendices at the back of the text. The **Statistics: Understanding Data** appendix discusses how psychologists use statistics to summarize and draw conclusions from the data they have gathered. The **Industrial/Organizational Psychology** appendix describes the branch of psychology that studies human behavior in the workplace. Your instructor may assign one or both of these appendices, or you may want to read them on your own.

Also at the back of this text is a **Glossary** containing the definitions for all **key terms** in the book and the pages on which they are discussed in more detail. You can use the **Subject Index** to locate discussions of particular topics and the **Name Index** to locate particular researchers. Finally, interested students can look up the specific studies we cite in the **References** sections.

LAUNCHPAD FOR *DISCOVERING PSYCHOLOGY,* SEVENTH EDITION

Get the most out of *Discovering Psychology,* Seventh Edition, with **LaunchPad,** which combines an interactive e-Book with high-quality multimedia content and activities that give you immediate feedback on your performance. Throughout the book you will see callouts that signal you to go to LaunchPad to access this online content.

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- **LearningCurve:** These game-like quizzes adapt to what you already know and help you master the concepts you need to learn.

To learn more about LaunchPad for *Discovering Psychology,* Seventh Edition, or to request access, go to **launchpadworks.com**.

That's it! We hope you enjoy reading and learning from the seventh edition of *Discovering Psychology.* If you want to share your thoughts or suggestions for the next edition of this book, you can write to us at the following address:

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Have a great semester!

MYTH OR SCIENCE

(inset) wavebreakmedia/Shutterstock
(bkgrd) David Engelhardt/age fotostock

Is it true . . .

- That the field of psychology focuses primarily on treating people with psychological problems and disorders?
- That Sigmund Freud was the first psychologist?
- That when two behaviors are "linked," "related," or tend to occur together, it's safe to assume that one behavior caused the other?
- That reading something over and over is the most effective way to prepare for a test?
- That psychologists are not allowed to trick you into taking part in a study?
- That brain scans can pinpoint the exact, single part of the brain that causes a complex behavior?

The First Exam

PROLOGUE

YOU DON'T NEED TO BE A PSYCHOLOGIST to notice that the classroom atmosphere can be a little tense the day after the first exam. As we handed back the test results, several faces fell. Many of the students were freshmen and not yet accustomed to the self-paced learning required in a college course. But there were also several older adults, including two military vets, one recently returned from Afghanistan.

"So let's go over these test questions," your author Sandy began. "I noticed a lot of you had trouble with the difference between independent and dependent variables. Maybe we should talk about that again before we go on to Chapter 2."

Jacob frowned. "I can't understand why I did so badly," he said. "I mean, I read the chapter! Look." He held up his textbook. The pages were heavily underlined and covered with highlight colors—yellow, blue, and green.

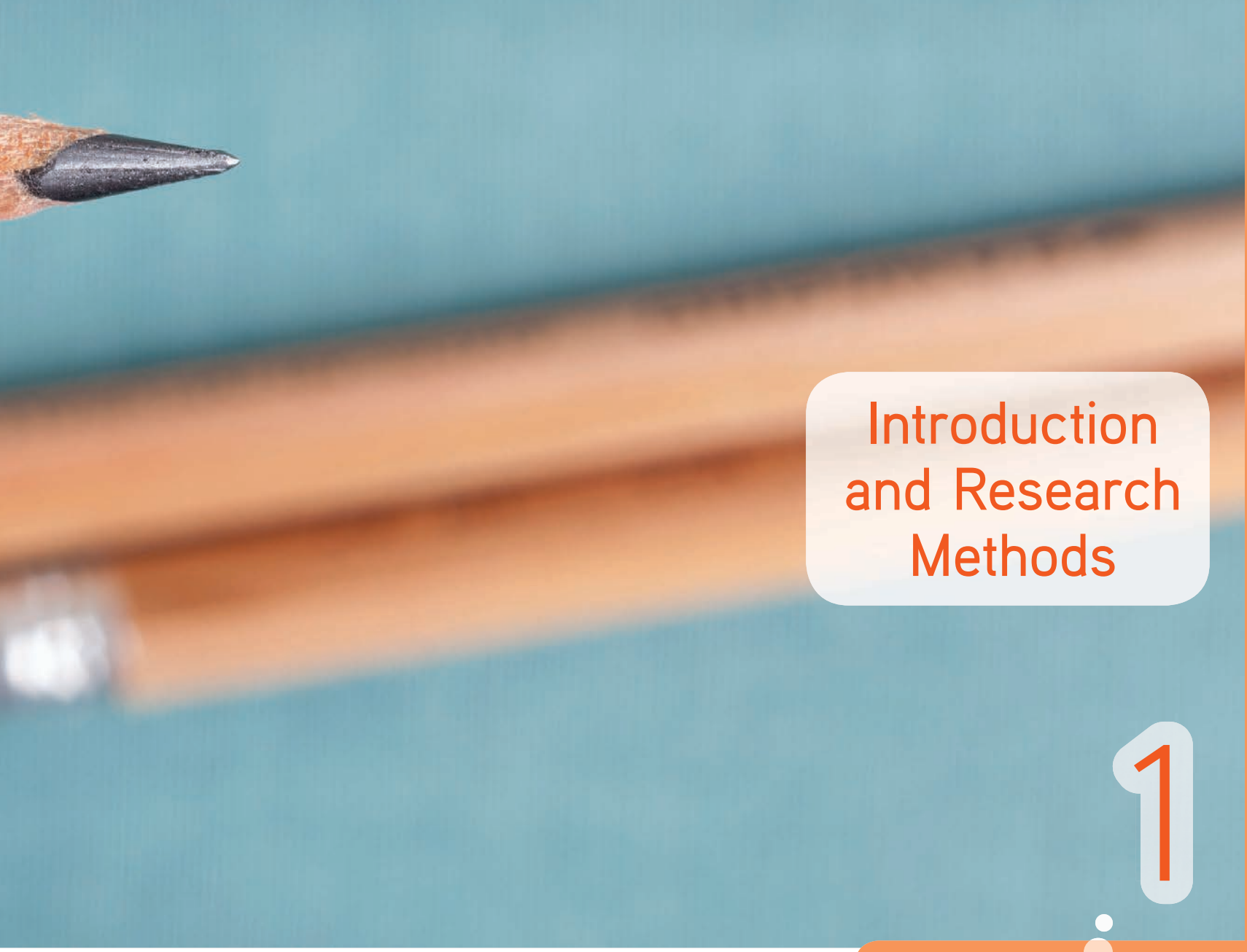
It isn't unusual for students to have trouble with their first real exam in college. Knowing that, we usually take some time to talk about study skills after exams are returned. "How did you prepare for the exam?" your author Susan asked the class.

"I made flashcards," Latisha said. "But it didn't seem to help that much. I only got a B-, and I thought I really knew this stuff."

"Flashcards can be a great technique," Sandy said, "if you use them correctly."

Latisha looked puzzled. "What do you mean? I used them the way everybody uses flashcards. I tested myself and if I knew the answer, I set the card aside. I kept running through the ones I missed until they were all gone and I knew them all."

"Well, believe it or not," Sandy said, "psychologists have done a lot of research on learning new material, and it turns out that that's *not* the most effective way to use flashcards."



Introduction and Research Methods

1

"What is, then?" Latisha asked.

"Stay tuned," Sandy said with a smile. "We're going to talk about it in today's class."

Jenna broke in. "I always freeze on tests. They stress me out so bad my mind goes blank."

"I do too," Tyler piped up. "So my girlfriend gave me this bracelet to wear for exams. She swears by hers. Do you think it helps?"

"What is that?" Sandy said. Tyler handed the heavy metal bracelet to Sandy. "What's it supposed to do?"

"It's made of some kind of special metal—maybe titanium?" Tyler said. "It's magnetic. Oh, and the Web site said it generated a negative ion field, or maybe it neutralizes positive ions. It didn't make a whole lot of sense to me. But my girlfriend said that a lot of famous baseball players and golfers wear one. It's supposed to help with pain but it's also supposed to help you concentrate and give you a better memory. I figured it couldn't hurt, so why not try it?"

"I'm not aware of any research on using magnets for concentration or memory," Sandy said carefully. "But we can certainly look it up and let you know what we find out."

Later in the chapter, we'll share what we found out about magnetic jewelry—and more important, what psychologists have discovered about

IN THIS CHAPTER:

the most effective ways to study. You'll also see how psychological research can help you critically evaluate new ideas and claims that you encounter outside the classroom.

As you'll discover, psychology has a lot to say about many of the questions that are of interest to college students. In this introductory chapter, we'll explore the scope of contemporary psychology as well as psychology's historical origins. The common theme connecting psychology's varied topics is its reliance on a solid foundation of scientific evidence. By the end of the chapter, you'll have a better appreciation of the scientific methods that psychologists use to answer questions, big and small, about behavior and mental processes.

Welcome to psychology! □

INTRODUCTION:
What Is Psychology?

KEY THEME

Today, psychology is defined as the science of behavior and mental processes, a definition that reflects psychology's origins and history.

KEY QUESTIONS

- What are the goals and scope of contemporary psychology?
- What roles did Wundt and James play in establishing psychology?
- What were the early schools of thought and approaches in psychology, and how did their views differ?

psychology The scientific study of behavior and mental processes.

Psychology is formally defined as *the scientific study of behavior and mental processes.* But this definition is deceptively simple. As you'll see in this chapter, the scope of contemporary psychology is very broad—ranging from the behavior of a single brain cell to the behavior of a crowd of people or even entire cultures.

Many people think that psychologists are primarily—or even exclusively—interested in studying and treating psychological disorders and problems. But as this chapter will show, psychologists are just as interested in "normal," everyday behaviors and mental processes—topics like learning and memory, emotions and motivation, relationships and loneliness. And, psychologists seek ways to use the knowledge that they discover through scientific research to optimize human performance and potential in many different fields, from classrooms to offices to the military.

MYTH ◀ SCIENCE

Is it true that the field of psychology focuses primarily on treating people with psychological problems and disorders?

Carmine Marinelli/ZUMA Press/Newscom

What Do Psychologists Study? It's International Pillow Fight Day and these young members of a flash mob join the fun in Vancouver, British Columbia. What motivated them to show up? What kind of emotions might they be feeling? How does the presence of like-minded others affect their behavior? Whether studying the behavior of a crowd of people or a single brain cell, psychologists rely on the scientific method to guide their investigations.

The four basic goals of psychology are to *describe, predict, explain,* and *control* or *influence* behavior and mental processes. To illustrate how these goals guide psychological research, think about our classroom discussion. Most people, like Jenna in the Prologue, have an intuitive understanding of what the word *stress* refers to. Psychologists, however, seek to go beyond intuitive or "common sense" understandings of human experience.

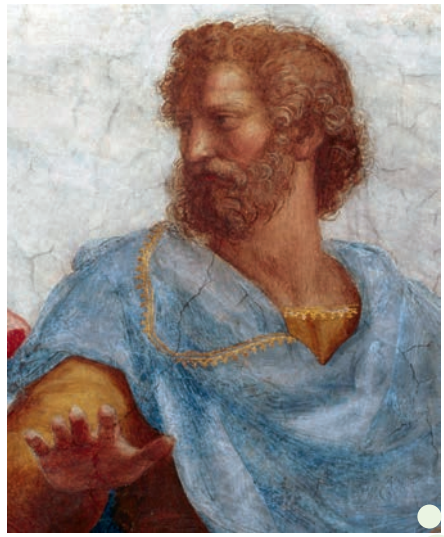
Here's how psychology's goals might help guide research on stress:

1. *Describe:* Trying to objectively *describe* the experience of stress, Dr. Garcia studies the sequence of emotional responses that occur during stressful experiences.
2. *Predict:* Dr. Kiecolt investigates responses to different kinds of challenging events, hoping to be able to *predict* the kinds of events that are most likely to evoke a stress response.
3. *Explain:* Seeking to *explain* why some people are more vulnerable to the effects of stress than others, Dr. Lazarus studies the different ways in which people respond to natural disasters.
4. *Control or Influence:* After studying the effectiveness of different coping strategies, Dr. Folkman helps people use those coping strategies to better *control* their reactions to stressful events.

How did psychology evolve into today's diverse and rich science? We begin this introductory chapter by stepping backward in time to describe the early origins of psychology and its historical development. As you become familiar with how psychology began and developed, you'll have a better appreciation for how it has come to encompass such diverse subjects. Indeed, the early history of psychology is the history of a field struggling to define itself as a separate and unique scientific discipline. The early psychologists debated such fundamental issues as:

- What is the proper subject matter of psychology?
- What methods should be used to investigate psychological issues?
- Should psychological findings be used to change or enhance human behavior?

These debates helped set the tone of the new science, define its scope, and set its limits. Over the past century, the shifting focus of these debates has influenced the topics studied and the research methods used.



Ted Spiegel/Corbis

Aristotle (384–322 B.C.E.) The first Western thinker to study psychological topics, Aristotle combined the logic of philosophy with empirical observation. His best-known psychological work, *De Anima*, is regarded as the first systematic treatise on psychology. Its topics included such basic psychological processes as the senses, perception, memory, thinking, and motivation. Aristotle's writings on psychology anticipated topics and theories that would be central to scientific psychology centuries later.

David Sacks/Getty Images

Nature or Nurture? Both father and daughter are clearly enjoying the experience of making art together. Is the child's interest in art an expression of her natural tendencies, or is it the result of her father's encouragement and teaching? Originally debated by philosophers hundreds of years ago, the relationship between heredity and environmental factors continues to interest psychologists today (Dick & others, 2015).

Psychology's Origins

THE INFLUENCE OF PHILOSOPHY AND PHYSIOLOGY

The earliest origins of psychology can be traced back several centuries to the writings of the great philosophers. More than 2,000 years ago, the Greek philosopher Aristotle wrote extensively about topics such as sleep, dreams, the senses, and memory. Many of Aristotle's ideas remained influential until the beginnings of modern science in the seventeenth century (Kheriaty, 2007).

At that time, the French philosopher René Descartes (1596–1650) proposed a doctrine called *interactive dualism*—the idea that mind and body were separate entities that interact to produce sensations, emotions, and other conscious experiences. Today, psychologists continue to explore the relationship between mental activity and the brain.

Philosophers also laid the groundwork for another issue that would become central to psychology, the *nature–nurture issue.* For centuries, philosophers debated which was more important: the inborn *nature* of the individual or the environmental influences that *nurture* the individual. This debate was sometimes framed as nature *versus* nurture. Today, however, psychologists understand that "nature" and "nuture" are impossible to completely disentangle (Sameroff, 2010). So, while some psychologists do investigate the relative influences of *heredity versus environmental factors* on behavior, today's researchers also focus on studying the dynamic *interaction* between environmental factors and genetic heritage (Dick & others, 2015; Szyf, 2013).

structuralism Early school of psychology that emphasized studying the most basic components, or structures, of conscious experiences.

Wilhelm Wundt (1832–1920) German physiologist Wilhelm Wundt is generally credited as being the founder of psychology as an experimental science. In 1879, he established the first psychology research laboratory. By the early 1900s, Wundt's research had expanded to include such topics as cultural psychology and developmental psychology (Wong, 2009).

Bettmann/Corbis

Edward B. Titchener (1867–1927) In contrast to the psychology programs at both Harvard and Columbia at the time, Edward Titchener welcomed women into his graduate program at Cornell. In fact, more women completed their psychology doctorates under Titchener's direction than under any other male psychologist of his generation (Evans, 1991).

Archives of the History of American Psychology, The University of Akron. Color added by publisher

Such philosophical discussions influenced the topics that would be considered in psychology. But the early philosophers could advance the understanding of human behavior only to a certain point. Their methods were limited to intuition, observation, and logic.

The eventual emergence of psychology as a science hinged on advances in other sciences, particularly physiology. *Physiology* is a branch of biology that studies the functions and parts of living organisms, including humans. In the 1600s, physiologists were becoming interested in the human brain and its relation to behavior. By the early 1700s, it was discovered that damage to one side of the brain produced a loss of function in the opposite side of the body. By the early 1800s, the idea that different brain areas were related to different behavioral functions was being vigorously debated. Collectively, the early scientific discoveries made by physiologists were establishing the foundation for an idea that was to prove critical to the emergence of psychology—namely, that scientific methods could be applied to answering questions about behavior and mental processes.

Wilhelm Wundt

THE FOUNDER OF PSYCHOLOGY

By the second half of the 1800s, the stage had been set for the emergence of psychology as a distinct scientific discipline. The leading proponent of this idea was a German physiologist named **Wilhelm Wundt** (Gentile & Miller, 2009). Wundt used scientific methods to study fundamental psychological processes, such as mental reaction times in response to visual or auditory stimuli. For example, Wundt tried to measure precisely how long it took a person to consciously detect the sight and sound of a bell being struck.

A major turning point in psychology occurred in 1874, when Wundt outlined the connections between physiology and psychology in his landmark text, *Principles of Physiological Psychology* (Diamond, 2001). He also promoted his belief that psychology should be established as a separate scientific discipline that would use experimental methods to study mental processes. In 1879, Wundt realized that goal when he opened the first psychology research laboratory at the University of Leipzig. Many mark this event as the formal beginning of psychology as an experimental science (Kohls & Benedikter, 2010).

Wundt defined psychology as the study of consciousness and emphasized the use of experimental methods to study and measure it. Until he died in 1920, Wundt exerted a strong influence on the development of psychology as a science (Wong, 2009). Two hundred students from around the world traveled to Leipzig to earn doctorates in experimental psychology under Wundt's direction. Over the years, some 17,000 students attended Wundt's afternoon lectures on general psychology, which often included demonstrations of devices he had developed to measure mental processes (Blumenthal, 1998).

Edward B. Titchener

STRUCTURALISM

One of Wundt's most devoted students was a young Englishman named **Edward B. Titchener.** After earning his doctorate in Wundt's laboratory, Titchener began teaching at Cornell University in New York. There he established a psychology laboratory that ultimately spanned 26 rooms.

Titchener shared many of Wundt's ideas about the nature of psychology. Eventually, however, Titchener developed his own approach, which he called *structuralism*. **Structuralism** became the first major school of thought in psychology. Structuralism held that even our most complex conscious experiences could be broken down into elemental *structures,* or component parts, of sensations and feelings. To identify these structures of conscious thought, Titchener trained subjects in a procedure

called *introspection*. The subjects would view a simple stimulus, such as a book, and then try to reconstruct their sensations and feelings immediately after viewing it. (In psychology, a *stimulus* is anything perceptible to the senses, such as a sight, sound, smell, touch, or taste.) They might first report on the colors they saw, then the smells, and so on, in the attempt to create a total description of their conscious experience (Titchener, 1896).

In addition to being distinguished as the first school of thought in early psychology, Titchener's structuralism holds the dubious distinction of being the first school to disappear. Titchener's death in 1927 essentially marked the end of structuralism as an influential school of thought in psychology. But even before Titchener's death, structuralism was often criticized for relying too heavily on the method of introspection.

As noted by Wundt and other scientists, introspection had significant limitations. First, introspection was an unreliable method of investigation. Different subjects often provided very different introspective reports about the same stimulus. Even subjects well trained in introspection varied in their responses to the same stimulus from trial to trial.

Second, introspection could not be used to study children or animals. Third, complex topics, such as learning, development, mental disorders, and personality, could not be investigated using introspection. Ultimately, the methods and goals of structuralism were simply too limited to accommodate the rapidly expanding interests of the field of psychology.

William James

FUNCTIONALISM

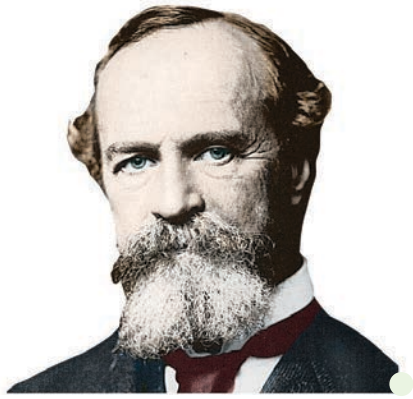
By the time Titchener arrived at Cornell University, psychology was already well established in the United States. The main proponent of American psychology was one of Harvard's most outstanding teachers—**William James.** James had become intrigued by the emerging science of psychology after reading one of Wundt's articles. But there were other influences on the development of James's thinking.

Like many other scientists and philosophers of his generation, James was fascinated by the idea that different species had evolved over time (Menand, 2001). Many nineteenth-century scientists in England, France, and the United States were *evolutionists*—that is, they believed that species had not been created all at once but rather had changed over time (Caton, 2007).

In the 1850s, British philosopher Herbert Spencer had published several works arguing that modern species, including humans, were the result of gradual evolutionary change. In 1859, **Charles Darwin's** groundbreaking work, *On the Origin of Species,* was published. James and his fellow thinkers actively debated the notion of evolution, which came to have a profound influence on James's ideas (Richardson, 2006). Like Darwin, James stressed the importance of adaptation to environmental challenges.

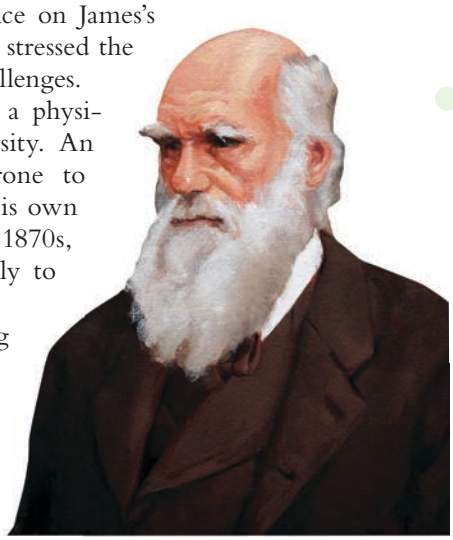
In the early 1870s, James began teaching a physiology and anatomy class at Harvard University. An intense, enthusiastic teacher, James was prone to changing the subject matter of his classes as his own interests changed (B. Ross, 1991). By the late 1870s, James was teaching classes devoted exclusively to the topic of psychology.

At about the same time, James began writing a comprehensive textbook of psychology, a task that would take him more than a decade. James's *Principles of Psychology* was finally published in 1890. Despite its length of more than 1,400 pages, *Principles of Psychology* quickly became the leading psychology textbook.



William James (1842–1910) Harvard professor William James was instrumental in establishing psychology in the United States. In 1890, James published a highly influential text, *Principles of Psychology.* James's ideas became the basis of another early school of psychology, called *functionalism,* which stressed studying the adaptive and practical functions of human behavior.

Bettmann/Corbis



Charles Darwin (1809–1882) Naturalist Charles Darwin had a profound influence on the early development of psychology. Darwin was not the first scientist to propose that complex organisms evolved from simpler species (Caton, 2007). However, Darwin's book, *On the Origin of Species,* published in 1859, gathered evidence from many different scientific fields to present a compelling account of evolution through the mechanism of natural selection. Darwin's ideas have had a lasting impact on scientific thought (Dickins, 2011; Pagel, 2009).

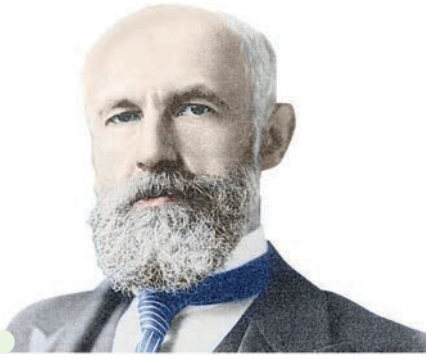
functionalism Early school of psychology that emphasized studying the purpose, or function, of behavior and mental experiences.

In it, James discussed such diverse topics as brain function, habit, memory, sensation, perception, and emotion.

James's ideas became the basis for a new school of psychology, called functionalism. **Functionalism** stressed the importance of how behavior *functions* to allow people and animals to adapt to their environments. Unlike structuralists, functionalists did not limit their methods to introspection. They expanded the scope of psychological research to include direct observation of living creatures in natural settings. They also examined how psychology could be applied to areas like education, child rearing, and the work environment.

Both the structuralists and the functionalists thought that psychology should focus on the study of conscious experiences. But the functionalists had very different ideas about the nature of consciousness and how it should be studied. Rather than trying to identify the essential structures of consciousness at a given moment, James saw consciousness as an ongoing stream of mental activity that shifts and changes.

Like structuralism, functionalism no longer exists as a distinct school of thought in contemporary psychology. Nevertheless, functionalism's twin themes of the importance of the adaptive role of behavior and the application of psychology to enhance human behavior are still important in modern psychology.



G. Stanley Hall (1844–1924) G. Stanley Hall helped organize psychology in the United States. Among his many achievements was the establishment of the first psychology research laboratory in the United States. Hall also founded the American Psychological Association.

Corbis

WILLIAM JAMES AND HIS STUDENTS

Like Wundt, James profoundly influenced psychology through his students, many of whom became prominent American psychologists. Two of James's most notable students were G. Stanley Hall and Mary Whiton Calkins.

In 1878, **G. Stanley Hall** received the first Ph.D. in psychology awarded in the United States. Hall founded the first psychology research laboratory in the United States at Johns Hopkins University in 1883. He also began publishing the *American Journal of Psychology,* the first U.S. journal devoted to psychology. Most important, in 1892, Hall founded the American Psychological Association and was elected its first president (Anderson, 2012). Today, the American Psychological Association (APA) is the world's largest professional organization of psychologists, with approximately 150,000 members. (The Association for Psychological Science, founded in 1988, has about 26,000 members.)

In 1890, **Mary Whiton Calkins** was assigned the task of teaching experimental psychology at a new women's college—Wellesley College. Calkins studied with James at nearby Harvard University. She completed all the requirements for a Ph.D. in psychology. However, Harvard refused to grant her the Ph.D. degree because she was a woman and at the time Harvard was not a coeducational institution (Pickren & Rutherford, 2010).

Although never awarded the degree she had earned, Calkins made several notable contributions to psychology. She conducted research in dreams, memory, and personality. In 1891, she established a psychology laboratory at Wellesley College. At the turn of the twentieth century, she wrote a well-received textbook, titled *Introduction to Psychology.* In 1905, Calkins was elected president of the American Psychological Association—the first woman, but not the last, to hold that position.

Mary Whiton Calkins (1863–1930) Under the direction of William James, Mary Whiton Calkins completed all the requirements for a Ph.D. in psychology. Calkins had a distinguished professional career. She established a psychology laboratory at Wellesley College and became the first woman president of the American Psychological Association.

For the record, the first American woman to earn an official Ph.D. in psychology was **Margaret Floy Washburn,** Edward Titchener's first doctoral student at Cornell University. Washburn strongly advocated the scientific study of the mental processes of different animal species. In 1908, she published an influential text, titled *The Animal Mind.* Her book summarized research on sensation, perception, learning, and other "inner experiences" of different animal species. In 1921, Washburn became the second woman elected president of the American Psychological Association (Viney & Burlingame-Lee, 2003).

Finally, one of G. Stanley Hall's notable students was **Francis C. Sumner.** Sumner was the first African American to receive a Ph.D. in psychology, awarded by Clark University in 1920. After teaching at several southern universities,

Margaret Floy Washburn (1871–1939) After becoming the first American woman to earn an official Ph.D. in psychology, Washburn went on to a distinguished career. Despite the discrimination against women that was widespread in higher education during the early twentieth century, Washburn made many contributions to psychology. She was the second woman to be elected president of the American Psychological Association.

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Francis C. Sumner (1895–1954) Francis Sumner studied under G. Stanley Hall at Clark University. In 1920, he became the first African American to earn a Ph.D. in psychology. Sumner later joined Howard University in Washington, D.C., and helped create a strong psychology program that led the country in training African American psychologists (Belgrave & Allison, 2010).

Sigmund Freud (1856–1939) In 1909, Freud *(front left)* and several other psychoanalysts were invited by G. Stanley Hall *(front center)* to participate in Clark University's twentieth-anniversary celebration in Worcester, Massachusetts (Hogan, 2003). Freud delivered five lectures on psychoanalysis. Listening in the audience was William James, who later wrote to a friend that Freud struck him as "a man obsessed with fixed ideas" (Rosenzweig, 1997). Carl Jung *(front right),* who later developed his own theory of personality, also attended this historic conference.

Sumner moved to Howard University in Washington, D.C. While at Howard, he published papers on a wide variety of topics and chaired a psychology department that produced more African American psychologists than all other American colleges and universities combined (Guthrie, 2000, 2004). One of Sumner's most famous students was **Kenneth Bancroft Clark.** Clark's research on the negative effects of discrimination was instrumental in the U.S. Supreme Court's 1954 decision to end segregation in schools (Jackson, 2006). In 1970, Clark became the first African American president of the American Psychological Association (Belgrave & Allison, 2010).

Clark University

Sigmund Freud

PSYCHOANALYSIS

Wundt, James, and other early psychologists emphasized the study of conscious experiences. But at the turn of the twentieth century, new approaches challenged the principles of both structuralism and functionalism.

In Vienna, Austria, a physician named **Sigmund Freud** was developing an intriguing theory of personality based on uncovering causes of behavior that were *unconscious,* or hidden from the person's conscious awareness. Freud's school of thought, called **psychoanalysis,** emphasized the role of unconscious conflicts in determining behavior and personality. Freud himself was a neurologist, *not* a psychologist. Nevertheless, psychoanalysis had a strong influence on psychological thinking in the early part of the century.

Freud's psychoanalytic theory of personality and behavior was based largely on his work with his patients and on insights derived from self-analysis. Freud believed that

MYTH ◀ **SCIENCE**

Is it true that Sigmund Freud was the first psychologist?

psychoanalysis Personality theory and form of psychotherapy that emphasizes the role of unconscious factors in personality and behavior.

behaviorism School of psychology and theoretical viewpoint that emphasizes the study of observable behaviors, especially as they pertain to the process of learning.

human behavior was motivated by unconscious conflicts that were almost always sexual or aggressive in nature. Past experiences, especially childhood experiences, were thought to be critical in the formation of adult personality and behavior. According to Freud (1904), glimpses of these unconscious impulses are revealed in everyday life in dreams, memory blocks, slips of the tongue, and spontaneous humor. Freud believed that when unconscious conflicts became extreme, psychological disorders could result.

Freud's psychoanalytic theory of personality also provided the basis for a distinct form of psychotherapy. Many of the fundamental ideas of psychoanalysis, such as the importance of unconscious influences and early childhood experiences, continue to influence psychologists and other professionals in the mental health field. We'll explore Freud's theory in more depth in Chapter 10 on personality and Chapter 14 on therapies.

John B. Watson

BEHAVIORISM

The course of psychology changed dramatically in the early 1900s when another approach, called **behaviorism,** emerged as a dominating force. Behaviorism rejected the emphasis on consciousness promoted by structuralism and functionalism. It also flatly rejected Freudian notions about unconscious influences, claiming that such ideas were unscientific and impossible to test. Instead, behaviorism contended that psychology should focus its scientific investigations strictly on *overt behavior*—observable behaviors that could be objectively measured and verified.

Behaviorism is another example of the influence of physiology on psychology. Behaviorism grew out of the pioneering work of a Russian physiologist named **Ivan Pavlov.** Pavlov demonstrated that dogs could learn to associate a neutral stimulus, such as the sound of a bell, with an automatic behavior, such as reflexively salivating to food. Once an association between the sound of the bell and the food was formed, the sound of the bell alone would trigger the salivation reflex in the dog. Pavlov enthusiastically believed he had discovered the mechanism by which all behaviors were learned.

In the United States, a young, dynamic psychologist named **John B. Watson** shared Pavlov's enthusiasm. Watson (1913) championed behaviorism as a new school of psychology. Structuralism was still an influential perspective, but Watson strongly objected to both its method of introspection and its focus on conscious mental processes. As Watson (1924) wrote in his classic book, *Behaviorism:*

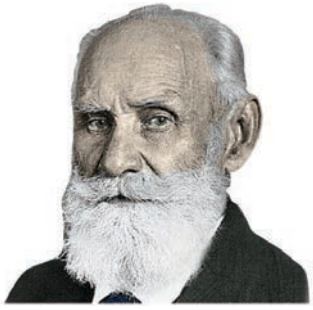
> Behaviorism, on the contrary, holds that the subject matter of human psychology *is the behavior of the human being.* Behaviorism claims that consciousness is neither a definite nor a usable concept. The behaviorist, who has been trained always as an experimentalist, holds, further, that belief in the existence of consciousness goes back to the ancient days of superstition and magic.

Behaviorism's influence on American psychology was enormous. The goal of the behaviorists was to discover the fundamental principles of *learning*—how behavior is acquired and modified in response to environmental influences. For the most part, the behaviorists studied animal behavior under carefully controlled laboratory conditions.

Although Watson left academic psychology in the early 1920s, behaviorism was later championed by an equally forceful proponent—the famous American psychologist **B. F. Skinner.** Like Watson, Skinner believed that psychology should restrict itself to studying outwardly observable behaviors that could be measured and verified. In compelling experimental demonstrations, Skinner systematically used reinforcement or punishment to shape the behavior of rats and pigeons.

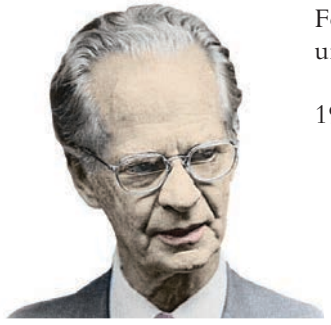
Three Key Scientists in the Development of Behaviorism Building on the pioneering research of Russian physiologist Ivan Pavlov, American psychologist John B. Watson founded the school of behaviorism. Behaviorism advocated that psychology should study observable behaviors, not mental processes. Following Watson, B. F. Skinner continued to champion the ideas of behaviorism. Skinner became one of the most influential psychologists of the twentieth century. Like Watson, he strongly advocated the study of observable behaviors rather than mental processes.

(t) Culver Pictures/The Art Archive at Art Resource, NY (bl) Underwood & Underwood/ Corbis (br) Archives of the History of American Psychology, The University of Akron



Ivan Pavlov (1849–1936)

John B. Watson (1878–1958)



B. F. Skinner (1904–1990)

Between Watson and Skinner, behaviorism dominated American psychology for almost half a century. During that time, the study of conscious experiences was largely ignored as a topic in psychology (Baars, 2005). In Chapter 5 on learning, we'll look at the lives and contributions of Pavlov, Watson, and Skinner in greater detail.

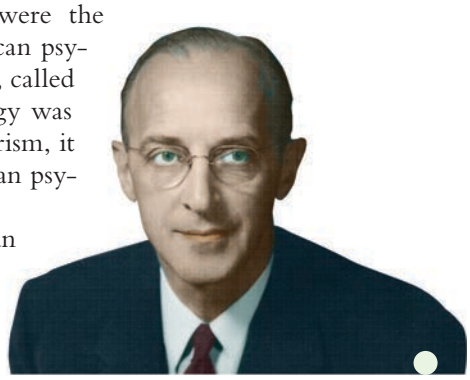
humanistic psychology School of psychology and theoretical viewpoint that emphasizes each person's unique potential for psychological growth and self-direction.

Carl Rogers

HUMANISTIC PSYCHOLOGY

For several decades, behaviorism and psychoanalysis were the perspectives that most influenced the thinking of American psychologists. In the 1950s, a new school of thought emerged, called **humanistic psychology.** Because humanistic psychology was distinctly different from both psychoanalysis and behaviorism, it was sometimes referred to as the "third force" in American psychology (Waterman, 2013; Watson & others, 2011).

Humanistic psychology was largely founded by American psychologist **Carl Rogers** (Elliott & Farber, 2010). Like Freud, Rogers was influenced by his experiences with his psychotherapy clients. However, rather than emphasizing unconscious conflicts, Rogers emphasized the *conscious* experiences of his clients, including each person's unique potential for psychological growth and self-direction. In contrast to the behaviorists, who saw human behavior as being shaped and maintained by external causes, Rogers emphasized self-determination, free will, and the importance of choice in human behavior (Elliott & Farber, 2010; Kirschenbaum & Jourdan, 2005).



Carl Rogers (1902–1987)

Abraham Maslow (1908–1970)

Two Leaders in the Development of Humanistic Psychology Carl Rogers and Abraham Maslow were key figures in establishing humanistic psychology. Humanistic psychology emphasized the importance of self-determination, creativity, and human potential (Serlin, 2012). The ideas of Carl Rogers have been particularly influential in modern psychotherapy. Abraham Maslow's theory of motivation emphasized the importance of psychological growth.

(l) Special Collections, Donald C. Davidson Library/University of California, Santa Barbara
(r) Courtesy of Robert D. Farber University Archives at Brandeis University

Abraham Maslow was another advocate of humanistic psychology. Maslow developed a theory of motivation that emphasized psychological growth, which we'll discuss in Chapter 8. Like psychoanalysis, humanistic psychology included not only influential theories of personality but also a form of psychotherapy, which we'll discuss in later chapters.

By briefly stepping backward in time, you've seen how the debates among the key thinkers in psychology's history shaped the development of psychology as a whole. Each of the schools that we've described had an impact on the topics and methods of psychological research. As you'll see throughout this textbook, that impact has been a lasting one. In the next sections, we'll touch on some of the more recent developments in psychology's evolution. We'll also explore the diversity that characterizes contemporary psychology.

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Contemporary Psychology

KEY THEME

As psychology has developed as a scientific discipline, the topics it investigates have become progressively more diverse.

KEY QUESTIONS

› How do the perspectives in contemporary psychology differ in emphasis and approach?

› How do psychiatry and psychology differ, and what are psychology's major specialty areas?

Over the past half-century, the range of topics in psychology has become progressively more diverse. And, as psychology's knowledge base has increased, psychology itself has become more specialized. Rather than being dominated by a particular approach or school of thought, today's psychologists tend to identify themselves according to: (1) the *perspective* they emphasize in investigating psychological topics and (2) the *specialty area* in which they have been trained and practice.