



DISCOVERING PSYCHOLOGY

SIXTH EDITION

HOCKENBURY & HOCKENBURY

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SIXTH EDITION

Don H. Hockenbury
Tulsa Community College

Sandra E. Hockenbury

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To Laura—
For the love and laughter along the way

ABOUT THE AUTHORS



Don H. Hockenbury is Associate Professor of Psychology at Tulsa Community College where he has had the privilege of teaching undergraduates for more than 30 years. Although Don is no longer actively involved in revising *Psychology* and *Discovering Psychology*, he continues to enjoy teaching online and traditional classes. Don is a recipient of the Tulsa Community College Award for Teaching Excellence. Don's educational background includes a B.S. in psychology and an M.A. in clinical psychology, both from the University of Tulsa. Before he began teaching college, he worked in psychiatric facilities and in private practice.

Don's favorite psychology topics include sleep and dreaming, biopsychology, applied cognition, psychopathology, and the history of psychology. Don belongs to several professional organizations, including the Association of Psychological Science (APS), the American Psychological Association (APA), the American Academy of Sleep Medicine (AASM), and the Sleep Research Society (SRS).



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 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 of Psychological Science (APS), and the American Association for the Advancement of Science (AAAS). Sandy is a member of the Board of Trustees of Shimer College and has 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.

Don and Sandy's daughter, Laura, recently graduated with a degree in geology from Carleton College and is currently employed as a research assistant in the groundwater and ecosystem restoration division of the Environmental Protection Agency in Seattle, WA. Like her parents, Laura has wide-ranging interests, including climate change, water and hydrogeology, sustainable development, music, rock climbing, and hiking. A classical and improvisational pianist, Laura is also an enthusiastic Ultimate Frisbee player.



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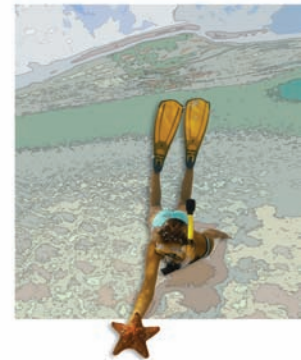
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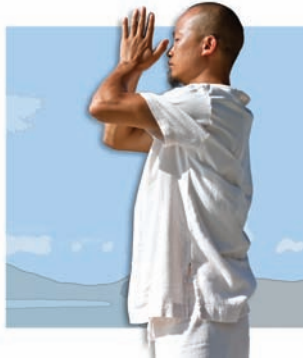
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To the Instructor

Welcome to the sixth edition of *Discovering Psychology*! For those of you who are using *Discovering Psychology* for the first time, this faculty preface will help orient you to the many features of our text, its supplements, and its media package. If you want to get the most out of our book and teaching package, reading this preface will be well worth your time. To those of you who have used a previous edition of *Discovering Psychology*, thank you for helping make our text a success! Rest assured that, once again, we have taken several steps to help make your transition to the new edition as smooth and easy as possible. As we've done previously, we have assembled a complete, detailed, and page-referenced list of changes in the new edition. You can find that list and other helpful materials in the instructor's section of the *Discovering Psychology*, Sixth Edition, Web Companion.

We've been gratified by the enthusiastic response to the five 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 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 sixth edition. It's hard to believe, but we've spent the last 20 years of our lives researching and writing six editions of *Discovering Psychology* and its larger sibling, *Psychology*. Watching the evolution of new research over the past two decades has only further solidified our conviction that psychology is the most exciting of all the sciences.

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.

More so than any other science, psychology speaks to students' lives. It provides a wealth of practical insights about behavior and mental processes. Throughout the text, we strive to communicate the excitement of scientific discovery and the relevance of psychological findings to students. It is a labor of love, not only for the sake of our discipline, but also for those wonderful “aha!” moments when some everyday behavior suddenly makes sense to a student because it's seen in a new light.

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 personal relevance of psychology
- Clearly explain psychological concepts and the relationships among them
- Show how classic psychological studies help set the stage for today's research
- Personalize historical figures in psychology with interesting biographical details
- Encourage and model critical and scientific thinking
- Present controversial topics in an impartial and evenhanded fashion
- Expand students' awareness of cultural and gender influences
- Create a student-friendly, personal learning environment
- Actively engage diverse students, including adult learners
- Provide an effective pedagogical system that helps students develop more effective learning strategies



Neuroscience and Behavior Laughing and talking as you and a friend simultaneously ride your bikes and scan the path for obstacles—even seemingly simple behaviors involve the harmonious integration of multiple internal signals and body processes. What kinds of questions might neuroscientists ask about the common behaviors shown here?

What's New in the Sixth Edition

We began the revision process with the thoughtful recommendations and feedback we received from hundreds of faculty using the text, from reviewers, and from colleagues. We also had face-to-face dialogues with our own students as well as groups of students across the country. After carefully evaluating the feedback from faculty and students, we worked, fueled at times by too many cups of coffee, to create the book you now have in your hands.

This sixth edition reflects an exhaustive updating with new coverage of the latest research, a stunning new design, and some exciting new media options. 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 hundreds of new references. Just to highlight a few additions, this edition features new or completely revised sections on neurons, glial cells, and traumatic brain injury (Chapter 2); attention, the functions of consciousness, and meditation (Chapter 4); bilingualism, animal cognition, and the roles of genetics and environment in determining intelligence (Chapter 7); emerging adulthood, social development in adulthood, and moral development (Chapter 9); resilience, social status, and the effects of stress on telomeres (Chapter 12); and mindfulness-based psychotherapies (Chapter 14). In addition, we have significantly updated coverage of neuroscience and expanded our coverage of culture and diversity throughout.

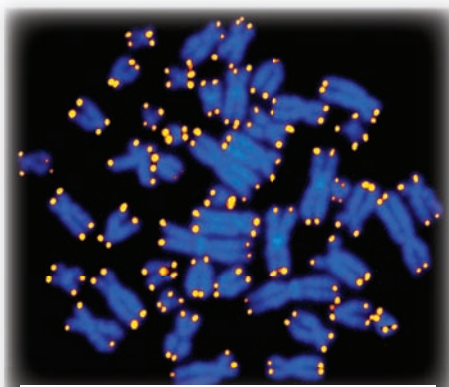
The Latest Psychological Science

Faculty members have told us how much they appreciate our efforts to present interesting and current psychology research to students. Keeping up with our incredibly diverse and productive discipline is an ongoing process. Just so you know, we currently subscribe to 12 print and 6 electronic journals, and we regularly monitor multiple psychology, neuroscience, and life science Web sites. And, we both enjoy thumbing through past and current issues of the *New Yorker* in search of just the right cartoon to enliven a new discussion or topic. The stacks of unshelved journals in our respective home offices can sometimes reach truly frightening heights. But scanning journals, newsletters, and science magazines like *New Scientist* and *Discover* often leads us to fascinating new research studies that ultimately find their way into our text. Examples range from the effects of concussions in professional athletes to “hooking up” on campus and evaluating the effectiveness of “baby genius” videos.

As of our last count, there are over 1,500 new references in the sixth edition of *Discovering Psychology*, more than half of which are from 2009, 2010, 2011, or 2012. These new citations reflect the many new and updated topics and discussions in the sixth edition of *Discovering Psychology*. From positive psychology to the latest discoveries about 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.

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—nearly 50 percent of them new—apply psychological concepts and research to real-world situations. Accompanied by



Telomeres Telomeres are short, repeated DNA sequences that are found at the very tips of chromosomes (Epel, 2009b). In the photo above, the telomeres are the fluorescent tips on the blue-stained human chromosomes. Like the plastic tips that protect shoelaces from fraying, telomeres protect the genetic data in the chromosomes from being broken or scrambled during cell division. With each cell division, the telomeres get shorter. However, an enzyme called *telomerase* can protect and even lengthen telomeres. Psychologists today are actively studying the environmental factors that affect telomere length, including behavioral interventions that increase telomerase activity (Blackburn & Epel, 2012; Jacobs & others, 2011).



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.

New Connections to the American Psychological Association's Principles for Quality Education in Psychology and APA Goals and Outcomes

Many faculty and departments are creating uniform standards for the psychology major and the introductory psychology course. To support faculty's efforts on this front, the sixth edition offers a new appendix on the APA's Principles for Quality Education in Psychology and the APA's goals and outcomes. In addition, the sixth edition test bank ties questions directly to the APA goals.

State-of-the-Art Media Options

There has been a revolution in the educational use of the Web over the past several years. For the sixth edition, our book is accompanied by the latest in educational technology, which combines interactive, visually exciting media with high-quality assessment. This edition is accompanied by *PsychPortal*, an e-book, a video tool kit, and new, interactive presentation slides. For more information about these supplements, please turn to the heading "The Teaching Package: Media Supplements," or you can get more information by going to our companion Web site at www.worthpublishers.com/discoveringpsych6e.

Three-Dimensional Brain Model

In addition to the cutting-edge coverage of the brain within the book, every new copy of the book can be packaged with a three-dimensional brain created by award-winning designer Bruce Foster and renowned anatomist Todd Buck. Together with the teaching activities available on the instructor Web site, this brain model will help students understand brain anatomy and its relation to human behavior.



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

- Updated discussion of the nature–nurture issue
- Revised introduction to the scientific method
- New photo examples of the biological perspective and cross-cultural psychology
- Updated data on specialty areas and employment settings for psychologists
- New research examples and photo illustrations of concepts in research methods, including operational definitions, meta-analysis, and naturalistic observation
- Revised explanation of how to read a journal reference includes information about the digital object identifier (DOI)
- New example illustrates the use of the case study method in research

- New data and table to illustrate survey research, along with a discussion of computer-administered surveys
- Revised discussion of experimental design includes new illustration of natural experiments with 2011 research on how the environment affects weight gain and the “freshman fifteen”
- Updated and revised “Enhancing Well-Being with Psychology” application on psychology in the media

Chapter 2, Neuroscience and Behavior

- Reorganized discussion of neurons, including a new figure illustrating the different kinds of neurons
- New photo examples of botox, “jogger’s high,” and sympathetic nervous system activation
- Expanded, updated section describes different glial cell types and is illustrated with a stunning new photo and updated research
- Revised discussion of drug effects on neurotransmitters introduces new key terms, *agonist* and *antagonist*
- New In Focus box, “Traumatic Brain Injury: From Concussions to Chronic Traumatic Encephalopathy” explores the causes and long-term implications of these injuries, with special reference to veterans and athletes
- New Focus on Neuroscience, “Mapping the Pathways of the Brain,” introduces a new brain-scanning technique, diffusion spectrum imaging, and the Human Connectome Project
- Streamlined Science Versus Pseudoscience box on phrenology
- Streamlined Focus on Neuroscience box, “Juggling and Brain Plasticity”
- Revised and updated Science Versus Pseudoscience box, “Brain Myths”
- Updated Critical Thinking box, “‘His’ and ‘Her’ Brains?”
- Photo sequence describing and illustrating the famous case of Phineas Gage
- Revised discussion of the amygdala
- Updated research in Enhancing Well-Being with Psychology application



Mapping the Pathways of the Brain: The Connectome Using a new brain-scanning technique called *diffusion spectrum imaging*, neuroscientists produced this three-dimensional image of the neural pathways of the brain. Each fiber in the photo represents hundreds of thousands of individual axons. Blue colors the bundled axons that form up the neural pathway stretching from the top to the bottom of the brain. Green represents pathways from the front (left) to the back (right) of the brain. Red shows the *corpus callosum*, the pathway between the right and left brain hemispheres.

Chapter 3, Sensation and Perception

- Updated box on subliminal perception
- Updated box on the impact of culture on perception
- Revised Critical Thinking box on ESP presents Daryl Bem’s controversial 2011 precognition research
- Revised In Focus box, “Do Pheromones Influence Human Behavior?” includes new research on human chemosignals
- Revised discussion of factors that influence pain “gates” describes recent research on the use of odors to manipulate mood
- Dramatic new photos illustrating figure–ground camouflage in nature
- New photo examples of Gestalt principles and monocular cues
- Enhancing Well-Being with Psychology application incorporates new research on pain control, mindfulness meditation, and new photo example of acupuncture in the NFL

Chapter 4, Consciousness and Its Variations

- Streamlined, retitled Prologue
- New introductory section on the functions of consciousness

- New section on attention and inattention blindness, incorporating recent studies and a visual demonstration of change blindness
- New discussion of multi-tasking and division of attention
- New research on brain activation during sleep
- New research on hypnagogic imagery related to daily experience
- Updated research on contagious yawning in chimpanzees as an evolutionary adaptive social cue
- New section on “Why Do We Sleep?”
- Updated section on the functions of sleep, including new information on sleep and memory, and sleep’s effect on the immune and endocrine systems
- New research on sleep patterns in adolescence
- New Focus on Neuroscience, “The Sleep-Deprived Emotional Brain,” features new research on the effects of sleep deprivation on emotional regulation
- Condensed Focus on Neuroscience, “The Dreaming Brain: Turning REM On and Off”
- Revised discussion of the activation–synthesis model of dreaming
- New section on the neurocognitive model of dreaming
- Streamlined coverage of circadian rhythms, sleep and memory formation, sleep disorders, theories of hypnosis, and psychoactive drugs
- Updated research on hypnosis and its applications
- Expanded meditation coverage includes updated terminology and reflects scientific interest in meditation as a way to study how intensive mental training affects brain function and basic psychological processes such as attention, memory, emotion, and pain
- New Focus on Neuroscience “Meditation and the Brain,” shows how mental training is associated with structural changes in the brain
- Updated research in the Focus on Neuroscience box, “The Addicted Brain”
- New photo of Amy Winehouse illustrating the dangers of alcohol abuse, and photo of Whitney Houston illustrating the danger of cocaine use
- New photo examples of psychoactive drug use around the world, cross-cultural examples of legal stimulant use, rave culture, and peyote-inspired visions
- Updated coverage of psychoactive drugs includes 2012 research
- Revised and updated coverage of the effects of MDMA (“Ecstasy”)

Chapter 5, Learning

- New photo examples of learning, use of classical conditioning principles in contemporary advertising
- New example of using conditioned taste aversions to protect the endangered northern quoll in Australia
- New photo of Edward Lee Thorndike
- New reports on the possible identity of “Little Albert”
- New examples of conditioned reinforcement, schedules of reinforcement, negative reinforcement, and punishment
- Updated research on the use of punishment
- Revised Critical Thinking box, “Is Human Freedom Just an Illusion?” explores the use of virtual gaming systems to promote social good
- Updated research on mirror neurons in humans
- Updated research on observational learning in nonhuman animals
- New information on entertainment education programs in the United States
- Updated research on biological preparedness, evolution, and conditioned fears

- New photo illustrations of classically conditioned emotional reactions, primary and secondary reinforcers, accidental reinforcement, learned helplessness, and observational learning
- New example of superstitious ritual in professional sports
- Revised and updated Critical Thinking box, “Does Exposure to Media Violence Cause Aggressive Behavior?”
- Enhancing Well-Being with Psychology application, “Using Learning Principles to Improve Self-Control,” updated with new research

Chapter 6, Memory

- New research on forgetting notes exceptions to the Ebbinghaus forgetting curve
- New research on how and why testing improves memory
- Expanded discussion of common retrieval glitches
- New research showing that pre-existing schemas can distort memories for events within seconds
- New biographical information about Henry Molaison (the famous “H.M.”), including a photographic reconstruction of H.M.’s brain after surgery
- Revised In Focus box on déjà vu experiences updated with 2012 research
- New photo examples of serial position effect, motivated forgetting, eyewitness misidentification, and memory consolidation
- Updated Enhancing Well-Being with Psychology application, “Superpower Memory in Minutes per Day!” includes expanded discussion of mnemonic techniques



Superpower Memory in Just Minutes Per Day? Journalist Josh 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. Josh’s secret? Mnemonic techniques, like the *method of loci*—and lots and lots of practice.

Chapter 7, Thinking, Language, and Intelligence

- Streamlined Prologue
- Expanded discussion of fixation incorporates new research on how expertise can interfere with effective problem-solving
- New photo examples of thinking, trial and error, decision-making, American Sign Language, and Gardner’s theory of multiple intelligences
- Revised Critical Thinking box, “The Persistence of Unwarranted Beliefs,” includes new material on the “wishful thinking” bias
- Entirely new section on bilingualism
- Updated and expanded section, “Animal Communication and Cognition,” featuring new research on cooperation in elephants and problem-solving in corvids
- New example of the availability heuristic
- New examples to illustrate Howard Gardner’s theory of multiple intelligences
- Streamlined discussion of the roles of genetics and environment in determining intelligence and updated research on the Flynn Effect
- Updated discussion of stereotype threat
- Updated research on creativity in the Enhancing Well-Being with Psychology application
- Many new visual examples of cognitive processes, including decision-making, trial-and-error, creativity, and heuristics

Chapter 8, Motivation and Emotion

- Updated information on global and U.S. prevalence of excess weight, obesity, and sedentary lifestyles
- New information about body mass index



- Expanded Focus on Neuroscience, “Dopamine Receptors and Obesity,” includes new research on the effects of overeating on the brain’s reward system chemistry
- Updated research on effects of hormones on sexual motivation in humans
- Updated research on evolution and mate preferences
- Updated and reorganized discussion of sexual orientation
- Updated research on self-determination theory
- Updated research on the functions of emotion and emotional intelligence
- Updated research on gender differences in emotion
- New cross-cultural research on the universality of emotional expression
- New, ethnically diverse photos of facial expressions of the basic emotions
- Updated research on the effects of Botox on emotional experience as a test of the facial feedback hypothesis
- Thoroughly updated Enhancing Well-Being with Psychology application incorporates new research
- New photo examples of Maslow’s hierarchy of motives, cultural influences on eating behavior, achievement motivation, famous gay couples, Barney Frank, same-sex couples with children, arousal and intense emotion, emotion in nonhuman animals, appraisal and emotion, arousal associated with intense emotion, and sensation seekers

Chapter 9, Lifespan Development

- Thoroughly revised genetics section features an expanded section on epigenetics and new research on the lifelong impact of early stress
- Expanded and updated coverage of teratogens
- Revised and reorganized discussion of physical development in infants now includes cephalocaudal and proximodistal trends
- Updated research on father–infant attachment
- New Science Versus Pseudoscience box investigates claims that “baby videos” can accelerate language and cognitive development
- Streamlined discussion of gender-role development
- New material on the timing of puberty
- Updated and condensed discussion of cognitive development
- New material on adolescent social development explores peer influence and romantic and sexual relationships
- Expanded discussion of moral development, including Jonathan Haidt’s research on the emotional roots of moral choices and cultural differences in moral values
- New section, “Emerging Adulthood,” introduces the period from the late teens until the mid- to late-20s as a distinct stage of the lifespan
- New In Focus box, “Hooking Up on Campus”
- Thoroughly revised section on social development in adulthood
- Expanded discussion of menopause and added discussion of andropause
- Reorganized and streamlined discussion of social development in adulthood
- Updated statistics on marriage and the family in the United States
- New placement of Critical Thinking box, “The Effects of Child Care on Attachment and Development,” emphasizes the importance of this issue to working parents
- Updated research on the structure of American families
- New material on cognitive function in late adulthood



The Importance of Attachment

Secure attachment in infancy forms the basis for emotional bonds in later childhood. At one time, attachment researchers focused only on the relationship between mothers and infants. Today, the importance of the attachment relationship between fathers and children is also recognized (Lucassen & others, 2011).

- New Focus on Neuroscience, “Boosting the Aging Brain,” presents new research showing that even moderate exercise can improve brain functioning
- Revised Enhancing Well-Being with Psychology application notes parenting practices in other cultures
- New photo examples of continuity and change over the lifespan, temperamental patterns, attachment, color-coding and gender, gender differences in play behavior, pretend play, formal operational thought, timing of puberty, pro-social peer behavior, moral development, child care, altruism in late adulthood

Chapter 10, Personality

- New Focus on Neuroscience, “The Neuroscience of Personality: Brain Structure and the Big Five”
- New section on the Myers–Briggs Type Indicator test, its uses and limitations
- Updated research on personality assessment techniques
- Many new photo examples including appealing to the id, mandalas in diverse cultures, the Oedipus complex, archetypes, unconditional positive regard, the TAT, sublimation, and self-efficacy

Chapter 11, Social Psychology

- Streamlined and updated discussion of person perception
- Discussion of cognitive dissonance updated with 2012 research
- Streamlined section on social categorization
- Expanded and updated discussion of physical attractiveness
- Updated Focus on Neuroscience, “Brain Reward When Making Eye Contact with Attractive People”
- New In Focus box, “Interpersonal Attraction and Liking”
- New section on implicit attitudes and the Implicit Association Test
- Discussion of contemporary replication of Milgram’s obedience study
- Updated discussion of bystander intervention
- New photos and captions provide contemporary examples of social categories, the self-serving bias, stereotypes, conformity, the persistence of the “what is beautiful is good” myth, blaming the victim bias, and bystander intervention

Chapter 12, Stress, Health, and Coping

- New prologue, “Fire and Ash,” describes how two people respond to the stress of a major disaster and its aftermath
- New introduction to stress and health psychology uses the example of a gratitude list to explain how thoughts and moods can affect physical processes
- New section on traumatic events distinguishes between normal coping and post-traumatic stress disorder
- New section on developing resilience incorporates new research
- Revised discussion of daily hassles, including updated research on gender differences
- New photo example illustrates how major life events can create daily hassles
- New table listing examples of daily hassles, including specific examples of hassles faced by college students and by children dealing with the stress of adapting to a new culture
- Expanded section on social and cultural sources of stress, with new research on racism as a particularly potent stressor and the importance of perceived social status
- New section on work stress and burnout



Self-Efficacy We acquire a strong sense of self-efficacy by meeting challenges and mastering new skills specific to a particular situation. By encouraging her daughter and helping her learn how to use a knife properly, this mother is fostering the young girl’s sense of self-efficacy.

- Reorganized section on the physical effects of stress, including distinction between acute and chronic stress
- All new section, “Stress, Chromosomes, and Aging: The Telomere Story,” includes three new figures
- Streamlined discussion of psychoneuroimmunology
- Revised discussion of stressors that can influence the immune system
- Updated research on personality, emotions, stress, and health
- New examples of research evidence for the importance of close relationships in our ability to deal with stressors
- Revised discussion of gender in the effects of social support
- Revised coverage of coping strategies includes new cross-cultural research
- New research on the health benefits of diversity in social support networks
- New photo examples of coping with stress, including new illustrations of finding meaning in tragedy and the effects of culture on coping
- Enhancing Well-Being with Psychology application, “Minimizing the Effects of Stress,” includes a new section on mindfulness meditation and instructions for practicing a simple mindfulness of breathing meditation

Chapter 13, Psychological Disorders

- Revised Prologue, “Behind the Steel Door”
- New data on the prevalence and incidence of psychological disorders in the United States
- Expanded coverage of the DSM-IV-TR presents a history of the manual, including critiques and a discussion of DSM-5, and a revised table of key diagnostic categories
- Expanded attention to comorbidity, including updated results from the replication of the National Comorbidity Survey (NCS-R)
- Critical Thinking box updated with new research on violence and mental illness
- Updated research on eating disorders and new photo example
- New Culture and Human Behavior box, “Culture-Bound Syndromes”
- Revised introduction to personality disorders includes a streamlined and reorganized table
- Expanded and updated research on genetic factors in schizophrenia and bipolar disorder

Chapter 14, Therapies

- Updated information on the status of prescription privileges for psychologists and new APA guidelines for psychologists involved in medication decisions
- Updated research on psychoanalysis, interpersonal therapy, humanistic therapy, and motivational interviewing
- Updated and expanded In Focus box on virtual reality therapy for phobias and post-traumatic stress disorder
- New section, “Cognitive–Behavioral Therapy and Mindfulness-Based Therapies”
- Revised and retitled box on EMDR, now a critical thinking box on evaluating new psychotherapy approaches
- Updated research on antipsychotic medications
- New data on the use of antidepressants in the United States and research that questions claims of their effectiveness
- Expanded application including helpful guidance on how to find a qualified psychotherapist



Jeff Tweedy and Panic Disorder

Founder of the alternative rock band Wilco, Jeff Tweedy has suffered from severe panic attacks for years. Tweedy (2008) explains the vicious cycle that underlies panic disorder: “You’ll have an actual panic attack and for weeks or months after that you’ll have a fear of a panic attack that can heighten your anxiety and heighten your stress levels to the point where you end up having another panic attack.” After psychological treatment, Tweedy is now better able to manage his symptoms of panic disorder.

Appendix B, Industrial/Organizational Psychology

- Updated mechanical ability test sample
- New photo examples of ergonomically designed work environment, teleworking, and work–family balance

Appendix C, APA Principles for Quality Education in Psychology and APA Goals and Outcomes

- New section on the APA Principles for Quality Education in Psychology demonstrates how this text supports introductory psychology students and instructors in achieving these goals.

Features of *Discovering Psychology*

For all that is new in the sixth 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, 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 illustrate 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 Asperger's syndrome, 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 continuously 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 sixth edition of *Discovering Psychology* includes the following In Focus boxes:

- Questions About the Use of Animals in Psychological Research, p. 37
- Traumatic Brain Injury: From Concussions to Chronic Traumatic Encephalopathy, p. 57
- Do Pheromones Influence Human Behavior?, p. 106
- What You Really Want to Know About Sleep, p. 143
- What You Really Want to Know About Dreams, p. 152
- Watson, Classical Conditioning, and Advertising, p. 191
- Evolution, Biological Preparedness, and Conditioned Fears: What Gives You the Creeps?, p. 198
- Changing the Behavior of Others: Alternatives to Punishment, p. 206
- Déjà Vu Experiences: An Illusion of Memory?, p. 250
- H.M. and Famous People, p. 266
- Does a High IQ Score Predict Success in Life?, p. 296
- Neurodiversity: Beyond IQ, p. 302
- Hooking Up on Campus, p. 403
- Explaining Those Amazing Identical-Twin Similarities, p. 445
- Interpersonal Attraction and Liking, p. 467
- Providing Effective Social Support, p. 519
- Gender Differences in Responding to Stress: “Tend-and-Befriend” or “Fight-or-Flight?”, p. 521
- Using Virtual Reality to Conquer Phobias, p. 590
- Self-Help Groups: Helping Yourself by Helping Others, p. 599
- Servant Leadership: When It's Not All About You, p. B-10
- Name, Title, Generation, p. B-11

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.



Encouraging Language Development

Research shows that one of the most effective ways to enhance a child's cognitive development is to read to her—even in infancy (Robb & others, 2009). Rather than spending money on expensive videos, buy books or check them out from your local library.

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 sixth edition of *Discovering Psychology* includes the following Science Versus Pseudoscience boxes:

- What Is a Pseudoscience?, p. 22
- Phrenology: The Bumpy Road to Scientific Progress, p. 63
- Brain Myths, p. 79
- Subliminal Perception, p. 91
- Can a DVD Program Your Baby to Be a Genius?, p. 382
- Graphology: The “Write” Way to Assess Personality?, p. 448

Critical Thinking Emphasis

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 sixth edition of *Discovering Psychology* includes the following Critical Thinking boxes:

- What Is Critical Thinking?, p. 18
- “His” and “Her” Brains?, p. 74
- ESP: Can Perception Occur Without Sensation?, p. 114
- Is Hypnosis a Special State of Consciousness?, p. 162
- Is Human Freedom Just an Illusion?, p. 208

- Does Exposure to Media Violence *Cause* Aggressive Behavior?, p. 223
- The Memory Wars: Recovered or False Memories?, p. 259
- The Persistence of Unwarranted Beliefs, p. 288
- Has Evolution Programmed Us to Overeat?, p. 329
- Are Women *Really* More Emotional Than Men?, p. 349
- Emotion in Nonhuman Animals: Laughing Rats, Silly Elephants, and Smiling Dolphins?, p. 354
- The Effects of Child Care on Attachment and Development, p. 407
- Freud Versus Rogers on Human Nature, p. 435
- Abuse at Abu Ghraib: Why Do Ordinary People Commit Evil Acts?, p. 484
- Do Personality Factors Cause Disease?, p. 516
- Are People with a Mental Illness as Violent as the Media Portray Them?, p. 534
- Does Smoking Cause Depression and Other Psychological Disorders?, p. 552
- Evaluating New Psychotherapies: The Case of EMDR, p. 604

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

- What Is Cross-Cultural Psychology?, p. 13
- Ways of Seeing: Culture and Top-Down Processes, p. 113
- Culture and the Müller-Lyer Illusion: The Carpentered-World Hypothesis, p. 126
- Culture's Effects on Early Memories, p. 241
- The Effect of Language on Perception, p. 290
- Performing with a Threat in the Air: How Stereotypes Undermine Performance, p. 308
- Evolution and Mate Preferences, p. 337
- Where Does the Baby Sleep?, p. 378
- Explaining Failure and Murder: Culture and Attributional Biases, p. 464
- The Stress of Adapting to a New Culture, p. 504
- Culture-Bound Syndromes, p. 556
- Cultural Values and Psychotherapy, p. 606

Gender Coverage

Gender influences and gender differences are described in many chapters. Table 2 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.



Separate Worlds? In childhood, girls tend to establish close relationships with one or two other girls and to cement their friendships by sharing thoughts and feelings. In contrast, boys tend to play in groups and favor competitive games and team sports. How might such gender differences affect intimate relationships in adolescence and adulthood?

TABLE 1

Integrated Cultural Coverage

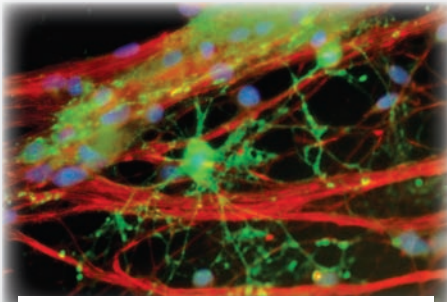
In addition to the topics covered in the Culture and Human Behavior boxes, cultural influences are addressed in the following discussions.

Page(s)	Topic	Page(s)	Topic
12	Cross-cultural perspective in contemporary psychology	380	Native language and infant language development
12	Culture, social loafing, and social striving	381	Cross-cultural research on infant-directed speech
53	Effect of traditional Chinese acupuncture on endorphins	381	Culture and patterns of language development
91	Israeli study on the effects of subliminal stimuli on political attitudes	385	Culture's influence on gender and gender roles
128	Use of acupuncture in traditional Chinese medicine for pain relief	387	Influence of culture on cognitive development
163	Meditation in different cultures	397	Cultural influences on timing of adolescent romantic relationships
164	Research collaboration between Tibetan Buddhist monks and Western neuroscientists	401-402	Culture and moral reasoning
167-168	Racial and ethnic differences in drug metabolism rate	412	Cultural differences in the effectiveness of different parenting styles
172	Tobacco and caffeine use in different cultures	421	Cultural influences on Freud's psychoanalytic theory
175	Peyote use in religious ceremonies in other cultures	429	Cultural influences on Jung's personality theory
175	Medicinal use of marijuana in ancient China, Egypt, India, and Greece	429	Jung on archetypal images, including mandalas, in different cultures
176	Rave culture and drug use in Great Britain and Europe	430	Cultural influences on the development of Horney's personality theory
208	Clash of B. F. Skinner's philosophy with American cultural ideals and individualistic orientation	435	Rogers on cultural factors in the development of antisocial behavior
222, 224	Cross-cultural application of observational learning principles in entertainment-education programming in Mexico, Latin America, Asia, and Africa	442-443	Cross-cultural research on the universality of the five-factor model of personality
243-244	Cross-cultural research on the tip-of-the-tongue phenomenon	445-446	Freud's impact on Western culture
290	Spontaneous development of sign languages in Nicaragua and a Bedouin village as cross-cultural evidence of innate human predisposition to develop language	460-461	Cultural conditioning and the "what is beautiful is good" myth
291	Worldwide prevalence of bilingualism	465	Attributional biases in individualistic versus collectivistic cultures
295	Historical misuse of IQ tests to evaluate immigrants	467	Cultural differences in interpersonal attraction
296	Wechsler's recognition of the importance of culture and ethnicity in developing the WAIS intelligence test	470-471	Stereotypes, prejudice, and group identity
299-300	Role of culture in Gardner's definition and theory of intelligence	471	Ethnocentrism
301	Role of culture in Sternberg's definition and theory of intelligence	477	Influence of cultural norms on conformity
307-308	Rapid gains in IQ scores in different nations	481	Cross-cultural comparisons of destructive social influence
308-309	Potential effect of culture on intelligence test performance	484	Role of cultural differences in abuse at Abu Ghraib prison in Iraq
308-309	Cross-cultural studies of group discrimination and IQ	503-504	Cross-cultural research on life events and stress
308-310	IQ and cross-cultural comparison of educational differences	503-304	Cultural differences as source of stress
310-311	Role of culture in tests and test-taking behavior	513	Cross-cultural research on the benefits of perceived control
322	Culture's effect on food preference and eating behavior	523	Effect of culture on coping strategies
337	Cultural differences in mate selection	533	Role of culture in distinguishing between normal and abnormal behavior
344-345	Culture and achievement motivation	536	Use of DSM categories to compile cross-cultural data on prevalence of psychological disorders
346	Culturally universal emotions	541	Cultural variants of panic disorder and panic attacks
347-348	Culture and emotional experience	542	<i>Taijin kyofusho</i> , a culture-specific disorder related to social phobia
347-348	Cross-cultural research on gender and emotional expressiveness	544	PTSD in child soldiers in Uganda and Congo
350	Cross-cultural studies of psychological arousal associated with emotions	546	Cultural influences in obsessions and compulsions
354-356	Universal facial expressions	555	Western cultural ideals of beauty and prevalence rates of eating disorders
355-356	Culture, cultural display rules, and emotional expression	546-547	Culture-bound syndromes
355-356	Cultural influences on temperament	561	Role of culture in dissociative experiences
379	Cross-cultural studies of attachment	567	Prevalence of schizophrenia in different cultures
379	Cultural influence on emotional expression	572	Findings from the Finnish Adoptive Family Study of Schizophrenia
		584	Use of interpersonal therapy to treat depression in Uganda
		603	Impact of cultural differences on effectiveness of psychotherapy
		607	Efficacy of traditional herbal treatment for psychotic symptoms in India

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	396	Gender differences in effects of early and late maturation
6–7	Contributions of Mary Whiton Calkins to psychology	401	Gender differences in moral reasoning
6–7	Contributions of Margaret Floy Washburn to psychology	403–404	Average age of first marriage and higher education attainment
60–61	Endocrine system and effects of sex hormones	405	Gender differences in single parent, head-of-household status
74	Sex differences and the brain	406	Gender and patterns of career development and parenting responsibilities
99	Gender differences in incidence of color blindness	408	Gender differences in life expectancy
106	Gender differences in responses to human chemosignals (pheromones)	426–427	Freud's contention of gender differences in resolving Oedipus complex
110	Gender differences in the perception of pain	427	Gender-identity development in Freud's psychoanalytic theory
150	Gender differences in dream content	429	Sexual archetypes (anima, animus) in Jung's personality theory
151	Gender and nightmare frequency	430	Horney's critique of Freud's view of female psychosexual development
154	Gender differences in driving while sleepy and traffic accidents related to sleepiness	432	Critique of sexism in Freud's theory
155–158	Gender differences in incidence of insomnia and other sleep disorders	467	Gender similarities and differences in interpersonal attraction
169	Gender and rate of metabolism of alcohol	470	Misleading effect of gender stereotypes
169	Gender and binge drinking among college students	479	Gender similarities in results of Milgram's obedience studies
186	Women as research assistants in Pavlov's laboratories	501–502	Gender differences in frequency and source of daily hassles
308–309	Test performance and the influence of gender stereotypes	518	Gender differences in providing social support and effects of social support
308–309	Language, gender stereotypes, and gender bias	519	Gender differences in susceptibility to the stress contagion effect
329–330	Gender differences in caloric intake and sedentary lifestyles	519	Gender and social networks
330	Gender differences in activity level and metabolism	521	Gender differences in responding to stress—the “tend-and-befriend” response
333–334	Sex differences in the pattern of human sexual response	539	Gender differences in anxiety disorder
334–335	Sex differences in hormonal influences on sexual motivation	541	Gender differences in prevalence of phobias
335–336	Gender differences related to the end of reproductive capability	542	Gender differences in prevalence of social phobia and <i>taijin kyofusho</i>
336–340	Sexual orientation	544	Gender differences in prevalence of post-traumatic stress disorder
337	Gender differences in mate preferences	548–549	Gender differences in prevalence of major depression and seasonal affective disorder
349	Gender similarities and differences in experience and expression of emotion	551	Lack of gender differences in prevalence of bipolar disorder
349	Gender differences in cultural display rules and emotional expression	556–557	Gender differences in prevalence of eating disorders
349	Gender differences in emotional expression	559	Gender differences in incidence of antisocial personality disorder
371	Sex differences in genetic transmission of recessive characteristics	560	Gender differences in incidence of borderline personality disorder
383–384	Definitions of gender, gender role, and gender identity	569–570	Paternal age and incidence of schizophrenia
384	Gender stereotypes and gender roles	573	Gender differences in number of suicide attempts and in number of suicide deaths
384	Sex differences in early childhood behavior	618	Gender differences in sexual contact between therapists and clients
384	Social factors influencing gender preference for pink and blue in early childhood	B-12	Gender differences in reasons for wanting to telecommute
385	Gender differences in friendship patterns		
385–386	Development of gender identity and gender roles		
385–386	Theories of gender-role development		
393	Gender differences in timing of the development of primary and secondary sex characteristics		
394–395	Gender differences in brain maturation		
395	Gender and accelerated puberty in father-absent homes		



Glial Cells: More Than Just the Brain's Packing Peanuts

This colored micrograph shows the first stages of myelin formation by an *oligodendrocyte*, colored green. Like a spider spinning a web, the oligodendrocyte sends tendrils out to neighboring axons (red) and wraps layers of myelin around them in a spiral-shaped pattern (Fields, 2011a; Nave, 2010).

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 sixth edition:

- Psychological Research Using Brain Imaging, p. 34
- Is “Runner’s High” an Endorphin Rush?, p. 54
- Mapping the Pathways of the Brain, p. 64
- Juggling and Brain Plasticity, p. 65
- Vision, Experience, and the Brain, p. 97
- The Sleep-Deprived Emotional Brain, p. 147
- The Dreaming Brain: Turning REM On and Off, p. 149
- Meditation and the Brain, p. 165
- The Addicted Brain: Diminishing Rewards, p. 168
- How Methamphetamines Erode the Brain, p. 174
- Mirror Neurons: Imitation in the Brain?, p. 220
- Assembling Memories: Echoes and Reflections of Perception, p. 262
- Mapping Brain Changes in Alzheimer’s Disease, p. 268
- Seeing Faces and Places in the Mind’s Eye, p. 279
- Dopamine Receptors and Obesity, p. 331
- Romantic Love and the Brain, p. 335
- Emotions and the Brain, p. 351
- The Adolescent Brain: A Work in Progress, p. 394
- Boosting the Aging Brain, p. 409
- The Neuroscience of Personality: Brain Structure and the Big Five, p. 444
- Brain Reward When Making Eye Contact with Attractive People, p. 462
- The Mysterious Placebo Effect, p. 510
- The Hallucinating Brain, p. 565
- Schizophrenia: A Wildfire in the Brain, p. 571
- Comparing Psychotherapy and Antidepressant Medication, p. 614

Enhancing Well-Being with Psychology

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 **Enhancing Well-Being with Psychology** 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:

- Psychology in the Media: Becoming an Informed Consumer, p. 38
- Maximizing Your Brain’s Potential, p. 81



- Strategies to Control Pain, p. 127
- Stimulus Control Therapy for Insomnia, p. 178
- Using Learning Principles to Improve Self-Control, p. 225
- Superpower Memory in Minutes per Day!, p. 269
- A Workshop on Creativity, p. 311
- Turning Your Goals into Reality, p. 361
- Raising Psychologically Healthy Children, p. 412
- Possible Selves: Imagine the Possibilities, p. 452
- The Persuasion Game, p. 489
- Minimizing the Effects of Stress, p. 525
- Understanding and Helping to Prevent Suicide, p. 573
- What to Expect in Psychotherapy, p. 617

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 xliii to xlvi, immediately before Chapter 1, describes the complete pedagogical system and how students can make the most of it.

The pedagogical system has three main components: (1) Advance Organizers, (2) Visual Concept Reviews, (3) Chapter Reviews, and (4) the *Discovering Psychology*, Sixth Edition, Web companion site. 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.

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.

Several other in-chapter pedagogical aids support the Advance Organizers and Concept Reviews. A clearly identified **Chapter Outline** provides an overview of topics and organization. Within the chapter, **key terms** are set in **boldfaced** 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. We also provide a page-referenced list of key people and key terms at the end of each chapter.

Beyond the learning aids in the text, every new copy of *Discovering Psychology* can be packaged with the study materials available through the online PsychPortal or the print Study Guide written by Cornelius Rea, Douglas College. Supplementing these materials, the **Book Companion Web site** contains multiple review activities. Each chapter has *two 15-question self-scoring practice quizzes, flashcards for rehearsing key*

terms, two crossword puzzles, and more. In addition to the companion Web site, the book is accompanied by some other premium Web materials including **PsychPortal**, which combines all the electronic resources available for the book (including the e-Book, interactive activities, and quizzes). The book companion site can be accessed at www.worthpublishers.com/discoveringpsych6e.

The Teaching Package: Print Supplements

The comprehensive teaching package that accompanies *Discovering Psychology* is designed to help you save time and teach more effectively. Many elements of the supplements package will be particularly helpful to the new, adjunct, or part-time instructor. This superb teaching package, expanded in the sixth edition, includes the following elements:

- **Instructor’s Resources and Binder**, prepared by Edna Ross, University of Louisville, with 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; and Nancy Melucci, Los Angeles Community College District. This edition will feature new activities submitted by 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 Instructor’s Resources include 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 will contain chapter objectives and outlines and suggestions on how to approach your lecture.
- **Test Bank**, written by Don and Sandra Hockenbury with the assistance of Cornelius Rea. This edition’s test bank was expertly revised by Cornelius Rea. This enhanced, printed 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 Resources. The Test Bank includes visual questions that you can include when generating and printing your tests. Each question is referenced to the textbook, identified as a factual/definitional or conceptual/analytical question, and keyed to a learning objective and an APA learning outcome.
- **Diploma Computerized Test Bank** This versatile dual-platform test-generating software allows instructors to edit, add, or scramble questions from the *Discovering Psychology*, Sixth Edition, Test Bank; 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 Wimba’s Web site: <http://www.wimba.com/products/diploma>
- **Study Guide for *Discovering Psychology***, written by Cornelius Rea, who taught psychology courses for many years at Simon Fraser University and Douglas College, and currently has a consulting business in West Vancouver, British Columbia, Canada. The Study Guide is carefully designed to help students understand text information and prepare for exams. Each chapter begins with At a Glance (which provides an overview of the chapter). Each Study Guide section includes a series of Preview Questions followed by fill-ins (some asking for lengthy responses). At the end of each Study Guide section is a Concept Check (application questions) followed by a Review of Key Terms, Concepts, and Names. The guide also contains Graphic Organizers, which encourage students to complete graphs, charts, and flow diagrams that ultimately provide a visual synopsis of text material. At the end of every Study Guide chapter are Something to Think About questions, which

contain thought-provoking questions designed to encourage critical thinking and application of the material, followed by three Progress Tests. All answers are provided at the end of the chapter.

- ***Psychology: The Human Experience Telecourse Student Guide***, written by Ken Hutchins, Orange Coast College, Costa Mesa, California. The Emmy award-winning Coast Learning System's telecourse, titled *Psychology: The Human Experience*, is based on *Discovering Psychology*, the designated text to accompany the telecourse. Ken Hutchins, Don Hockenbury, and Sandra Hockenbury were members of the Faculty Advisory Committee and were closely involved in the development of the telecourse. The Telecourse Student Guide by Ken Hutchins draws clear connections between the text and the telecourse, helping students to get the most out of the learning experience.
- **The *Scientific American Psychology Reader*** is a collection of articles selected from recent issues of *Scientific American* magazine. Each article is accompanied by an introduction and preview of each article, as well as a series of thoughtful discussion questions to encourage classroom discussions.
- ***Pursuing Human Strengths: A Positive Psychology Guide***, by Martin Bolt, Calvin College. Martin Bolt's new workbook aims to help students build up their strengths. Closely following the research, this book provides a brief overview of nine positive traits, such as hope, self-respect, commitment, and joy. It also offers self-assessment activities that help students gauge how much of the trait they have developed and research-based suggestions for how they might work further toward fostering these traits.
- ***Critical Thinking Companion, Second Edition***, by Jane Halonen, University of West Florida, and Cynthia Gray, Alverno College. This engaging and challenging handbook includes exercises in pattern recognition, practical problem solving, creative problem solving, scientific problem solving, psychological reasoning, and perspective taking.
- **New! *Psychology and the Real World: Essays Illustrating Fundamental Contributions to Society***, by the FABBS Foundation is a collection of brief, personal, original essays, in which leading academic psychologists describe what their area of research has contributed to society. Unique among textbook ancillaries, *Psychology in the Real World* does not reprint writings. Rather, innovative psychological scientists like Elizabeth Loftus, Paul Ekman, Eliot Aronson, and others clearly and entertainingly tell readers why their research matters and how their line of inquiry developed. The FABBS Foundation is a nonprofit educational foundation that supports the work of 22 scholarly societies that span the cognitive, psychological, behavioral, and brain sciences. The authors in this volume have volunteered their contributions and have agreed that all grants, advances, royalties, and other financial earnings from this volume will go to the FABBS Foundation to support their educational mission.

The Teaching Package: Media Supplements

- **PsychPortal** is a breakthrough online learning space created by psychologists for psychologists. Combining a powerful quizzing engine with unparalleled media resources, it contains all the functionality you expect from a site that can serve as an independent online course, but it is the core teaching and learning components that make PsychPortal truly unique. PsychPortal for *Discovering Psychology*, Sixth Edition, is organized around these main components:
 - **New! LearningCurve** Combining adaptive question selection, personalized study plans, and state-of-the-art question analysis reports, LearningCurve provides students with a unique learning experience. LearningCurve quizzing activities have a game-like feel that keeps students engaged in the material while helping them learn key concepts.

- **A Complete, Fully Interactive e-Book of *Discovering Psychology, Sixth Edition*** Worth's e-Books integrate the complete text, a rich assortment of media-powered learning opportunities, and a variety of customization features for students and instructors. The platform was developed by Pepper Williams, a cognitive psychologist (Ph.D., Yale University) who taught undergraduate psychology at the University of Massachusetts. The e-Book is also available as a stand-alone resource, giving students a low-cost alternative to purchasing the printed textbook. An e-Book is also available through *CourseSmart*.
- **Concepts in Action** Created by award-winning multimedia author Tom Ludwig and embedded throughout the e-Book, these Flash-based activities help students solidify their understanding of key concepts as they encounter them in the text.
- **An Assignment Center** PsychPortal's Assignment Center makes it easy for instructors to construct and administer tests and quizzes based on the book's Test Bank or their own questions. Instructors can use pre-created assignments or create their own, choosing from a question bank that includes every exercise from the textbook, along with hundreds of additional questions. Quizzes are randomized and timed, and instructors can receive summaries of student results in reports that follow the section order of the chapters.
- **Course Materials** With more of Worth's premium resources than ever, this one-stop location provides quick access to all student and instructor media associated with the book—an extraordinary range of outstanding resources, including:
 - **Video Tool Kit Activities—Expanded!**
 - **PsychInvestigator**
 - **PsychSim 5.0**
 - **PsychInquiry**
 - **New! Worth Introductory Psychology Video Series, produced by *Scientific American* and *Nature*—30 clips!**
- **Complete customization** Every element of PsychPortal is customizable, from the arrangement of the home page to the assignment of e-Book sections, to all forms of assessment. Instructors can:
 - Rearrange chapters or sections of the e-Book—or replace chapters or sections with their own content.
 - Insert quizzes, discussion forums, uploaded files, or any content into e-Book sections, or lessons of their own making.
 - Replace, supplement, or delete questions from the premade quizzes and homework assignments that come prepackaged in the portal.
- **PsychInvestigator: Laboratory Learning in Introductory Psychology** by Arthur Kohn, Ph.D. Available within PsychPortal or as a stand-alone resource, this exciting Web-based product is a virtual laboratory environment that enables students to participate in real experiments that reinforce the most important concepts of the introductory psychology course. Students are introduced to psychological experiments in a dynamic environment featuring hosts video-streamed for the most realistic portrayal possible. In **PsychInvestigator**, students participate in classic psychology experiments, generate real data, and review the broader implications of those findings in psychological science. In each experiment, students participate in compelling video tutorials that are displayed before *and* after the actual experiment. PsychInvestigator requires no additional faculty time. Students' quiz scores can be automatically uploaded into an online grade book if instructors wish to monitor students' progress.
- The **Companion Web Site** at www.worthpublishers.com/discoveringpsych6e provides students with a free online study guide. Features include learning objectives, crossword puzzles, critical thinking activities, online quizzes, a Spanish/English glossary, and interactive Web activities. Instructors can access a wealth of teaching materials from PowerPoint slides to Clicker questions.

- **Instructor Flash Drive** This flash drive includes pre-built PowerPoint presentations for each chapter; a digital library of photographs, figures, and tables from the text; an electronic version of the Instructor’s Resources and Lecture Guides; and Worth’s Video Anthology.

The Teaching Package: Video Supplements

- **Worth Video Anthology for Introductory Psychology** Instructors can now access a “best of” collection that showcases the video series listed below. The Worth Video Anthology for Introductory Psychology is available on flash drive and closed-captioned DVD.
- **New! Worth Introductory Psychology Video Series** Produced by Worth Publishers, in conjunction with sister companies Scientific American and Nature, this breakthrough collection of new modular tutorial videos explores core psychology topics. It includes 30 short films, each approximately 8 minutes in length. Authoritative, engaging, and beautifully realized, the collection includes animations, interviews with top scientists, and carefully selected archival footage, all focused on helping students understand everything from classical conditioning to cognitive dissonance. Although it is housed primarily in the Worth Video Anthology, instructors may also request this collection on its own, either on a flash drive or closed-captioned DVD.
- **Worth Publishers Video Tool Kit for Introductory Psychology** With its superb collection of 160 brief (1- to 13-minute) clips, the Video Tool Kit for Introductory Psychology gives students a fresh new way to experience both the classic experiments at the heart of psychological science and cutting-edge research conducted by the field’s most influential investigators. Available online or on DVD, the site enables you to create gradable, reportable video assignments for your students that you can customize by adding notes and open-ended questions, and assigning star ratings. These videos are also available to instructors on CD-ROM and closed-captioned DVD. Instructors using the CD can easily import videos into their interactive presentation slides and the accompanying faculty guide includes step-by-step importation instructions for users of different platforms. The accompanying faculty guide is by Martin Bolt, Calvin College. A subset of the videos (110) is available on a non-reportable DVD for students who lack Internet connectivity or have bandwidth issues.
- **Scientific American Frontiers Teaching Modules, Third Edition** Edited by Martin Bolt, this collection offers 15 clips from *Scientific American Frontiers* segments produced between 2003 and 2005. Footage includes Phineas Gage Revisited, Understanding Autism, and Therapeutic Effectiveness.
- **Worth Digital Media Archive First and Second Editions (CD-ROM, DVD)** contains a rich collection of 75 digitized video clips of classic experiments and research. Footage includes Albert Bandura’s Bobo doll experiment, Harold Taikooshian’s bystander studies, Piaget’s conservation experiment, electrical brain stimulation, Harry Harlow’s monkey experiments, Stanley Milgram’s obedience study, and Ulric Neisser’s selective attention studies.

Presentation

- **Interactive Presentation Slides for Introductory Psychology** This extraordinary series of “next-generation” Interactive Presentation Lectures gives instructors a dynamic, yet easy-to-use new way to engage students during classroom presentations of core psychology topics. Each lecture provides opportunities for discussion and interaction, and enlivens the psychology classroom

with an unprecedented number of embedded video clips and animations (including activities from Worth's ActivePsych). Each Interactive Presentation Lecture features:

- Embedded videos
- A number of activities
- Ready-to-use clicker questions
- Vivid images
- Worth's Interactive Presentation Slides for Introductory Psychology, available in two volumes on preloaded flash drives
- **ActivePsych: Classroom Activities Projects and Video Teaching Modules** offers tools to make class presentations more interactive. This set of instructor presentation CD-ROMs includes interactive flash and slides, and video clips from *Scientific American Frontiers* and various archival sources. *ActivePsych* video clips are available on CD, DVD, and VHS.

Acknowledgments

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As colleagues who care as much as we do about teaching, they have our gratitude for their hard work and commitment to excellence.

We are indebted to our colleagues who acted as reviewers throughout the development of the sixth edition of *Discovering Psychology*. Their thoughtful suggestions and advice helped us refine and strengthen this edition. To each and every reviewer, thank you for generously sharing your time and candid thoughts with us:

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Tulsa Community College

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Worth Publishers

The remarkable people who make up Worth Publishers have a well-earned reputation for producing college textbooks and supplements of the highest quality. Special thanks to our associate publisher, Jessica Bayne, for her leadership and unfailing support. And, we greatly appreciate the energy, creativity, and dedication of our intrepid new editor for this edition, Rachel Losh, who embraced our book's goals and vision with enthusiasm. Next up is our developmental editor, Marna Miller (aka "Wonder Woman") whose talent, dedication, and unflappable good humor are truly remarkable. Marna is more than "just" a gifted editor—she is a wonderful human being. Thanks also go to editorial assistant Agnes Baik, who expertly and cheerfully kept track of countless details, stacks of paper, and electronic files. The incredible new design for the sixth edition reflects the creative talents of art director and artist Babs Reingold. The text's beautiful layout also owes a great deal to the talented efforts of Lyndall Culbertson. The stunning graphics of this edition represent the combined talents of illustrator Todd Buck, Worth photo editor Christine Buese, and photo researcher Jacqueline Wong, whose creative efforts to find just the right image are greatly appreciated.

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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, Christine Burak, Stacey Alexander, Agnes Baik, and Betty Probert have expertly assembled the integrated program of print, video, and Internet supplements that accompanies our text. They are awesome!

Psychology marketing manager Lindsay Johnson helped launch the sixth edition with her expertly coordinated advertising, marketing, and sales support efforts. Special thanks to our longtime friend and adopted family member, Steve Patrick, Southwest Regional Manager.

A few personal acknowledgements are in order. Several friends and family members kindly allowed us to share their stories with you. Sadly, Fern, Erv, and Ken are no longer with us, but they live on in our memories, as well as in the personal stories that we continue to tell about them. We deeply miss Fern and Erv's unflagging support, and the kindness, love, and seemingly endless supply of funny stories that we so relied on over the years of writing and revising the six previous editions of *Psychology* and the five previous editions of *Discovering Psychology*. We also thank Bob and Tom, Janeen and Marty, Terry and Jean, Judylynn, Zak, Josh, Jordon, Katie, and all the other members of our extended family for their support and encouragement. We are grateful to our good friends Andi, Hawk, and Wyncia; Asha and Paul; Tom and Lynn, and their children, Will, and Lily; and especially Marcia, for allowing us to tell their stories in our book. Had Richard lived to see the publication of *Discovering Psychology*, we know he would have been proud to be part of its pages.

Finally, our daughter Laura has lived with this project since she was born. Recently graduated with a degree in geology from Carleton College, Laura is currently employed as a research assistant at the Environmental Protection Agency Region 10 headquarters in Seattle, Washington. Laura, thank you for your idealism, and your generous, open-hearted idealism. Wherever you go, go with all your heart!

An Invitation

We hope that you will let us know how you and your students like the sixth edition of *Discovering Psychology*. And, as always, we welcome your thoughts, comments, and suggestions. You can write to us in care of:

Worth Publishers
41 Madison Avenue, 35th Floor
New York, NY 10010

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.

Learning from *Discovering Psychology*

Welcome to psychology! Our names are **Don and Sandy 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 into this textbook.

KEY QUESTIONS

- › What are the functions of the Prologue, 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, 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.

Next, read the chapter **Prologue**. The Prologue is a true story 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.

The Prologue will help you relate the new information in this book to experiences that are already familiar to you. 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 red 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.

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 dark 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.

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. 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 astrology. These discussions will help teach you how to think scientifically and critically evaluate claims.
- **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 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 **Enhancing Well-Being with Psychology** application at the end of each chapter provides specific suggestions 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. The Enhancing Well-Being sections show you how psychology can be applied to a wide variety of everyday concerns. We hope that these sections make a difference in your life. Because the Enhancing Well-Being sections for Chapters 5, 6, and 8 deal with setting and achieving goals and enhancing motivation and memory, you may want to skip ahead and read them after you finish this student preface.



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.

The *Discovering Psychology* Web Companion Site

The *Discovering Psychology* Web Companion site is the home of Worth's free virtual study aids and supplemental content. You can access the companion Web site at: www.worthpublishers.com/discoveringpsych6e.

Below are some suggestions for how you can use those resources to your advantage.

- Print the **Learning Objectives** to provide a detailed list of the information that you should master for each chapter.
- Take the self-scoring **quizzes** and use the **flashcards** to test yourself on the key terms and key people. The Web site also offers a Spanish language version of the flashcards.
- Use the **crossword puzzles** as a fun way to test your knowledge of key terms and key people. There are two crossword puzzles for each chapter and one for each appendix.
- **Animations** will help you apply and reinforce your understanding of important chapter concepts.

The Study Guide

Beyond the learning aids contained in each chapter and on the online resources for *Discovering Psychology*, we also highly recommend the excellent **Study Guide** that accompanies this text. The guide was written by our colleague Cornelius Rea, who taught psychology courses for many years at Simon Fraser University and Douglas College, and currently has a consulting business in West Vancouver, British Columbia, Canada. You can order a Study Guide through your bookstore or online through Worth Publishers.

That's it! We hope you enjoy reading and learning from the sixth 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:

Don and Sandy Hockenbury
c/o Worth Publishers
41 Madison Avenue, 35th Floor
New York, NY 10010

Or you can contact us at our e-mail address:

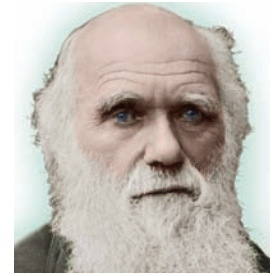
Hockenbury.Psychology@gmail.com

Have a great class!

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CHAPTER

1



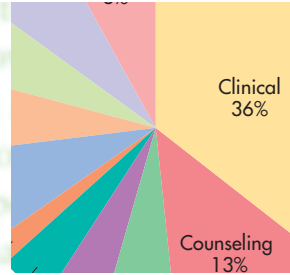
Introduction and Research Methods



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Miracle Magnets?

PROLOGUE

YOU DON'T NEED TO BE A PSYCHOLOGIST to notice that every class has its own collective personality. In our 11 o'clock introductory psychology class during this particular semester, multiple personalities emerged as the students quickly segregated themselves by age and life experiences.

The younger students were a hodgepodge of languages, ethnic groups, hairstyles, tattoos, and piercings. Best described as boisterous bordering on rowdy, this crew clustered together on the right side of the classroom and regularly asked interesting (and sometimes off-the-wall) questions.

Grouped on the left side of the class were seven middle-aged adult students. Although they occasionally spoke up in class, they were fairly reserved. Two of the guys were laid-off workers training for new jobs. And there were three women who were back in school now that their children were older. Brenda was one of them.

Lingering after class one day, Brenda asked if Don had time to talk. “Do you know anything about magnet therapy for psychological disorders?” she asked.

“I know a little about the research on transcranial magnetic stimulation, if that’s what you’re asking about,” Don responded. Brenda looked puzzled.

“It’s abbreviated TMS,” Don explained. “It’s a procedure that uses powerful electromagnetic fields to stimulate the brain. The device looks kind of like two big, flat donuts side by side on a wand. They set the thing on a person’s skull and the magnetic coils inside generate magnetic fields.”

“So it’s not like a regular magnet?” Brenda asked.

“Oh, no. Not at all. The device is actually an electromagnet. It needs electricity to generate the magnetic field.”

“Can it be used for schizophrenia?”

“TMS? From what I’ve read, TMS is used to treat depression. My understanding is that it’s still experimental. I can find out more about it if you want.”

“What about magnetic vests? Could something like this be used to treat schizophrenia?” Brenda asked, unfolding a piece of paper and handing it to Don. It was an ad for a cloth vest with 48 magnets sewn into the front and back lining. The ad was cluttered with quotes from people who claimed that the vest had improved their athletic ability or relieved pain or other symptoms.

“Wow, forty-eight magnets. That must be incredibly heavy to wear,” Don commented as he studied the ad. “I don’t mean to pry, Brenda, but can I ask why you’re asking about this?”

Brenda glanced around the classroom, checking to make sure no one else was listening to the conversation. “I have a son named Adam. He was diagnosed with schizophrenia about three years ago, just after his thirteenth birthday,” she explained.

IN THIS CHAPTER:

- Introduction: The Origins of Psychology
- Contemporary Psychology
- The Scientific Method
- Descriptive Research Methods
- The Experimental Method
- Ethics in Psychological Research
- ENHANCING WELL-BEING WITH PSYCHOLOGY:
Psychology in the Media: Becoming an Informed Consumer