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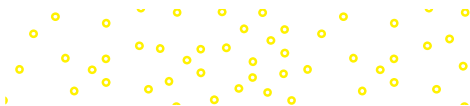
GREGORY J. FEIST
ERIKA L. ROSENBERG

PSYCHOLOGY⁴

PERSPECTIVES AND CONNECTIONS



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PSYCHOLOGY

PERSPECTIVES AND CONNECTIONS

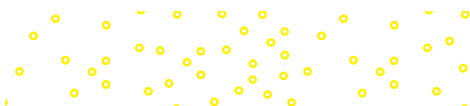
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PSYCHOLOGY

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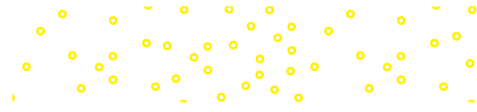
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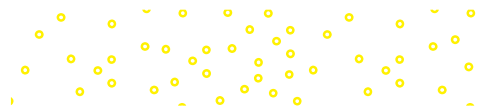
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To our most precious collaborative work,
Jerry and Evan





About the Authors



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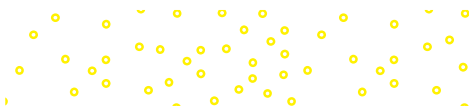
Gregory J. Feist

Gregory J. Feist is Professor of Psychology in Personality and Adult Development at San Jose State University. He has also taught at the College of William & Mary and the University of California, Davis. He received his PhD from the University of California, Berkeley, and his undergraduate degree from the University of Massachusetts–Amherst.

Dr. Feist is widely published in the psychology of creativity, the psychology of science, personality, and the development of scientific talent. One of his major goals is establishing the psychology of science as a healthy and independent study of science, along the lines of history, philosophy, and sociology of science. Toward this end, Dr. Feist has published a book titled *Psychology of Science and the Origins of the Scientific Mind* (2006, Yale University Press), which was awarded the 2007 William James Book Prize by the Division of General Psychology, American Psychological Association (APA). In addition, he is the founding president of the International Society for the Psychology of Science and Technology.

A second major focus for Dr. Feist is the identification and development of scientific talent, as seen in finalists of the Westinghouse and Intel Science Talent Search. His paper (co-authored with Frank Barron) “Predicting Creativity from Early to Late Adulthood: Intellect, Potential, and Personality” won Article of the Year for 2003 in the *Journal of Research in Personality* and *Psychology of Aesthetics, Creativity and the Arts*. His teaching efforts have been recognized by outstanding teaching awards at both UC Berkeley and UC Davis. Dr. Feist is also co-author with his late father, Jess Feist (and Tomi-Ann Roberts), of the undergraduate text *Theories of Personality*. In his spare time, Dr. Feist enjoys cycling, camping, hiking, and skiing.





©Erika Rosenberg

Erika L. Rosenberg

Erika L. Rosenberg is an emotions researcher, health psychologist, and teacher of meditation. Dr. Rosenberg received her PhD in Psychology from the University of California, San Francisco, where she studied with Paul Ekman. Dr. Rosenberg served on the faculties at the University of Delaware and the College of William & Mary. Erika is a Senior Investigator at the Center for Mind and Brain at the University of California, Davis, Senior Teacher at the Center for Compassion and Altruism Research and Education (CCARE) at Stanford University, Faculty at

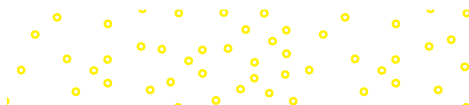
Nyingma Institute of Tibetan Studies, in Berkeley, CA, and Founding Faculty at The Compassion Institute, a new nonprofit devoted to the promotion of compassion worldwide.

Dr. Rosenberg is a world-renowned expert in facial expression of emotion, who trains and consults on facial measurement using the Facial Action Coding System (FACS). She teaches FACS workshops worldwide and consults on facial expression with academic, corporate, and entertainment industry clients worldwide, including digital effects and animators in major computer game and film production companies. From 2009–2011 she served as Scientific Consultant on the Fox TV show *Lie to Me*.

Erika's work with meditation encompasses both teaching and personal practice and spans nearly three decades. As a senior teacher at Stanford University's CCARE, she co-authored the Compassion Cultivation Training (CCT) program with Thupten Jinpa and others in 2009. In 2010, she personally presented the CCT program to His Holiness the Dalai Lama. Erika Rosenberg has taught meditation in diverse international venues such as Google Inc., Lerab Ling Monastery, Upaya Zen Center, Kripalu Yoga Center, The Telluride Institute, and Burning Man.

In addition to McGraw-Hill's *Psychology: Perspectives and Connections*, 4e, Erika is co-editor of *What the Face Reveals* (with Paul Ekman), now in press in its 3rd edition, and author of numerous scientific articles and chapters on facial expression, emotion, and meditation.

Formerly married, now amicably divorced and forever colleagues, Erika and Greg have two sons, Jerry and Evan, and live in Oakland, California.





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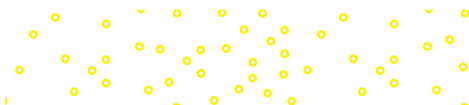
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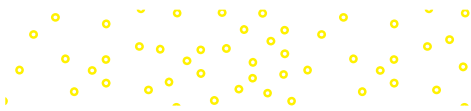
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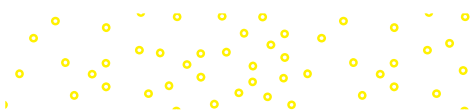
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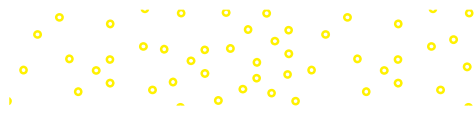
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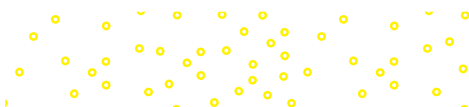


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Foreword by Paul Ekman

Perhaps it was because I had never taken Introductory Psychology that I became a psychologist—or so I used to quip at the start of undergraduate lectures. Fifty years ago the textbooks for introductory courses were a turn-off. Most were dry and segmented. The only reason to read them was to pass Introductory Psychology in order to get to the higher-level courses you really wanted to take. It was an obstacle you had to jump over. Things have changed!

This textbook—I hesitate to use the word—is fun to read, enlightening, useful, and provocative. I recommend it to anyone—not just undergraduates—who wants a contemporary overview of psychology. In fact, people with no intentions of studying psychology will find this book engaging and interesting and useful to their life. Wow.

Make no mistake—this is not a how-to book. It is not going to tell you how to get rid of whatever bothers you or find a mate or choose a career or become the most charming person in the world. But it will fascinate you; in each chapter, you will learn about the cutting edge of knowledge, how science is done, what it means, and why it is important to understand that most complex of all subjects—why we do what we do and when and how we do it.

My own specialty for 40 years has been the study of facial expressions, and in the last decade or so I have reached out to develop a theory about emotion itself and how to lead a better emotional life. So I was surprised to find that when I read the chapter “Motivation and Emotion,” I learned something new. This is a comprehensive book; the coverage, even from a specialist’s view, is amazing. And in each chapter the reader learns about both the breakthrough discoveries that have fundamentally altered the field of psychology and those scientists responsible for them.

I still find it a bit amazing that I should be ending a foreword to a textbook with the phrase “have fun.”

Psychology: Perspectives

Just because we “think” something doesn’t make it true. *Psychology: Perspectives and Connections* guides students in moving beyond what may seem obvious, to reevaluating the thoughts and beliefs they bring to the course. Students will learn to challenge their assumptions, understand the elements of scientific research, and recognize that in psychology, *no one perspective tells the whole story*.

CHALLENGING ASSUMPTIONS

Questioning assumptions is the first step in thinking scientifically. While building a foundation in the concepts and principles of psychology, our goal as teachers and authors has always been to encourage students to examine their preconceptions (as well as those held by others) and understand that there is often more than one plausible explanation for a given phenomenon.

Challenge Your Assumptions

True or False? Genetic influence on our thoughts and actions is set at birth and can’t be changed.

False: Experience can and does change how and when genes get expressed.

Each chapter opens with **Challenge Your Assumptions**, a list of common assumptions for students to consider.

THINKING SCIENTIFICALLY

Throughout the *Psychology: Perspectives and Connections* program, we model critical thinking and offer multiple opportunities for students to practice this skill. In “Introduction to Psychology,” we define the discipline, analyze major ways of thinking about the human experience, and present a framework for analyzing research and testing assumptions against real world observation. At the end of each chapter, **Bringing It All Together: Making Connections** integrates the major ideas covered in the chapter, shows their application to a common problem, and highlights connections across the various subfields of psychology.

We focus on high-interest topics including obsessive-compulsive disorder (OCD) and anxiety disorders (Treatment of Psychological Disorders) and how people of different genders and cultures experience the world (Sensing and Perceiving Our World), to

Bringing It All Together

Making Connections in Psychology

Studying Electronic Social Interactions

There are nearly a dozen ways a person can interact with others electronically—via email, blogs, phone calls, chat rooms, texting, instant messaging, audio or video chats, gaming (either solo or multiplayer), videos, photos, bulletin boards, and social network sites (SNSs). Humans have taken to electronic forms of interaction like fish to water. As a form of behavior that is evolving at a rapid pace, electronic social interaction holds great interest for psychologists in all of the subfields you read about in this chapter. Let’s consider how psychologists from some of these areas might study electronic communication and its effects on human behavior and thought.



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Cognitive Psychology

Cognitive scientists typically are interested in how we learn, speak, remember, think, and reason. They are also interested in attention. The widespread use of mobile devices has sparked a number of research questions. The

How does technology change how we learn, think, feel, and behave with others?

emphasize how psychological science uses systematic investigation to address important questions about the human experience.

Another key goal is helping students to understand the theoretical perspectives and learn to apply them in a variety of settings—hence, the presence of the term *perspectives* in the title. We call attention to the influence of theoretical perspectives on advances in psychology, as well as in the different subfields of psychology. For example, we include a section comparing theoretical perspectives on intelligence (Intelligence, Problem Solving, and Creativity), and we invite students to explore the influences of nature and nurture on personality development, along with the theoretical perspectives that have inspired personality researchers (Personality: The Uniqueness of the Individual). By understanding that it’s possible to study behavior through different lenses, students learn to look for underlying points of view.

Psychology: Perspectives and Connections also encourages students to consider the diverse approaches to the study of human thought and behavior. **Connection** annotations appear throughout the text, emphasizing the interrelatedness of subfields of psychology.

Connection

How do psychologists tease apart the question of how much of a trait is due to genetics and how much is due to environment? A common approach is to study twins (both identical and fraternal) who are reared apart or reared together.

See “The Relative Effects of Genes and Environment Can Be Teased Apart,” in the chapter “The Biology of Behavior,” (p. 79)

rationalism

The view that using logic and reason is the way to understand how the world works.

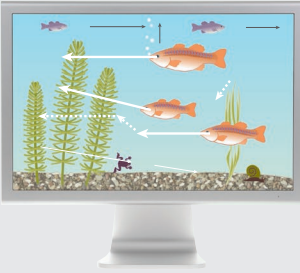
and Connections

MAKING SCIENCE ACCESSIBLE

Psychology: Perspectives and Connections approaches the science of psychology in a straightforward, approachable manner to help students develop scientific literacy. Beginning with the question “What is science?” in the “Introduction to Psychology” chapter, we stress that psychology shares with the natural and physical sciences a way of thinking about the world that separates what we *believe* from what is *real*. A strong focus on research and the scientific method in the “Conducting Research in Psychology” chapter lays the foundation for subsequent science-based chapters on neuroscience and genetics and on sensation and perception, which are challenging topics for many students. Throughout the program, we describe classic and contemporary research in depth to familiarize students with the scientific approach to collecting and analyzing data and sharing the results to advance knowledge. Moreover, this edition reflects the latest thinking, based on current research, in all areas of psychology.

Research Process

- 1 Research Question**
Do people from an Eastern culture (Japan) focus more on and have better recall for objects in the background and periphery of a scene than people from a Western culture (United States)?
- 2 Method**
For this quasi-experimental study by Masuda and Nisbett (2001), participants came into the laboratory individually and sat down at a computer. They watched a 20-second video of the scene depicted here. The large fish are considered foreground. Plants, small fish, and the other nonmoving animals (rocks and shells) are considered background. Arrows indicate the direction in which the fish and other objects moved during the scene. After viewing the video, participants orally described what they had seen. Trained coders rated the number of statements they made about various aspects of the scene, such as foreground and background fish, the small stationary animals, and the plants.



Overcoming preconceptions about the research process may be one of the biggest challenges students face in Introductory Psychology. **Research Process** features, appearing in Chapters 2 through 16, demystify research by providing a step-by-step visual approach to the scientific method.

Using the basic structure of a contemporary study to exemplify scientific thinking, we walk through the “story” of how the research was conducted. In the chapter “Sensing and Perceiving Our

World,” for example, this feature illustrates the methodology chosen by a researcher to answer the question, “Do people from an Eastern culture (Japan) focus more on and have better recall for objects in the background and periphery of a scene than people from a Western culture (United States)?”

Most chapters in the fourth edition feature expanded coverage on technology and social media and how they affect thought and behavior. For example, in the “Social Behavior” chapter, we address the concept of groupthink in social media as well as the rise of “fake news” sites.

APPLYING PSYCHOLOGY TO EVERYDAY LIFE

One of the perennially difficult tasks we face as instructors is to connect course material to students’ lives and interests. In *Psychology: Perspectives and Connections*, we demonstrate the relevance of psychology in multiple ways in both the text and digital programs.

Psychology in the Real World features show how psychological research can directly affect people’s lives. For instance, how musical training changes the brain (“Human Development”), and whether Internet use can become an addiction (“Psychological Disorders”).

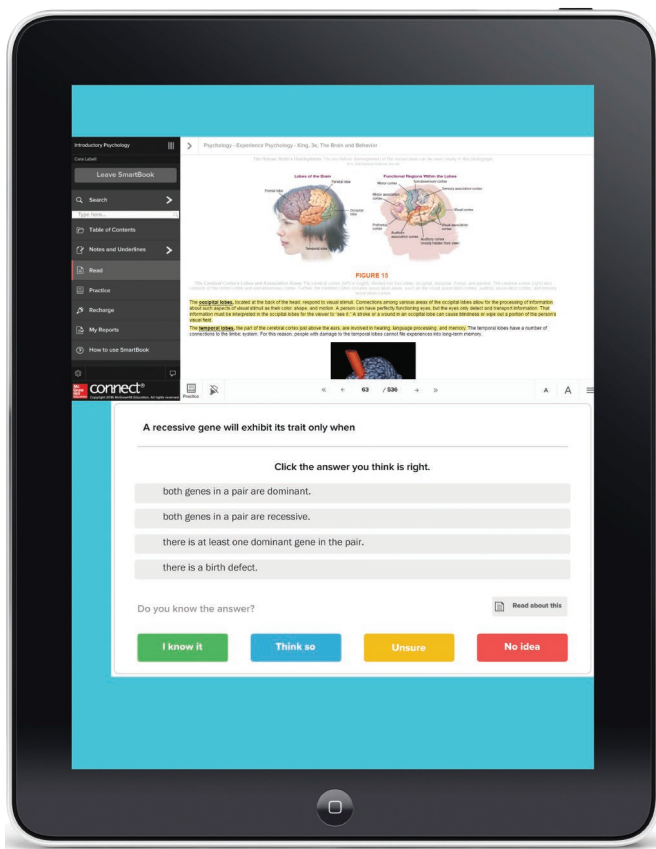
Additional examples in the text make psychological principles and concepts more concrete by connecting them to current, real-world experiences; for instance, in the chapter “Consciousness”, the limits of *attention* are underscored with the example of how texting during class prevents attention to the lecture, and graphics in the chapter “Learning” use student-relevant examples of classical and operant conditioning to make these difficult concepts accessible.

IMPROVING READING AND STUDY



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- The **LearnSmart Reports** allow instructors and students to easily monitor progress and pinpoint areas of weakness, giving each student a personalized study plan to achieve success.

REVISING WITH STUDENT DATA

Step 1. Over the course of three years, data points showing concepts that caused students the most difficulty were anonymously collected from the Connect **SmartBook** for *Psychology: Perspectives and Connections, 3/e*.

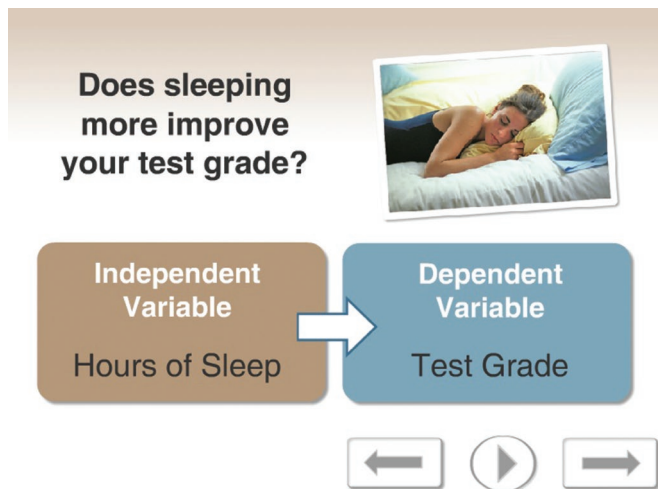
Step 2. The data from **SmartBook** was provided to the authors in the form of a **Heat Map**, which graphically illustrated “hot spots” in the text that impacted student learning.

Step 3. Greg Feist and Erika Rosenberg used the Heat Map data to refine the content and reinforce student comprehension in the new edition. Additional quiz questions and assignable activities were created for use in Connect to further support student success.

Result: With empirically based feedback at the paragraph and even sentence level, the authors developed the new edition using precise student data to pinpoint concepts that caused students to struggle.

INFORMING AND ENGAGING STUDENTS

At the Remember and Understand levels of Bloom's taxonomy, **Concept Clips** help students break down key themes and difficult concepts in psychology. Using easy-to-understand analogies, visual cues,



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audio, and colorful animation, Concept Clips make psychology meaningful to everyday life.

New Concept Clips in the fourth edition include: Hypothesis and Theories; Forgetting; The Meaning of Dreams; The Four Phases of the Human Sexual Response; Sensation and Perception of Touch; Sex and Gender; Aggression, Conformity, and Obedience; Routes of Persuasion; Stereotypes/Prejudice/Discrimination; Social Facilitation, Replication of Research, Interpersonal Attraction, Learned Gender Roles, and more.

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

Naturalistic Observation START OVER

Open Coding Task

Watch the video clip of young Jasmine and keep a record of what you observe by typing brief statements in your research notebook to the right of the video. Feel free to replay the clip as many times as you need in order to get a good sense of what sort of behaviors you are seeing. We have included some sample observations to get you started. Once you are finished, click the Next button.

Sample statements

- At 33 months, Jasmine plays with toys in a group setting.
- J crawls on the floor.
- J returns a book to the shelf when asked by an adult.

NARRATION: On Replay Transcript

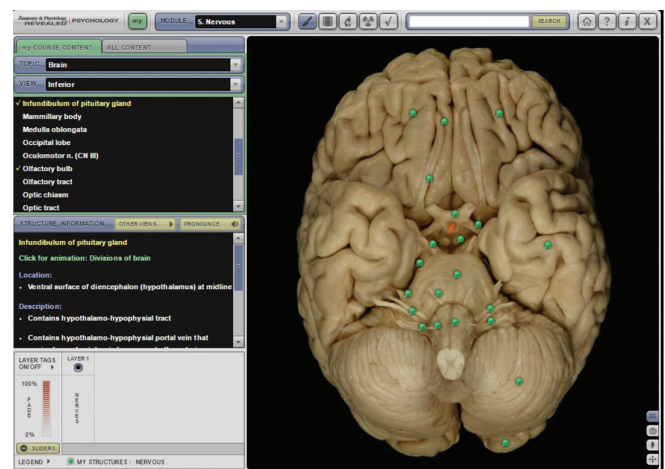
◀ PREV NEXT ▶

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At the Understand and Apply levels of Bloom's taxonomy, **NewsFlash** exercises, powered by Connect, tie current news stories to key psychological principles and learning objectives. After interacting with a contemporary news story, students are assessed on their ability to make the connection between real life and research findings. Cases are revisited across chapters, encouraging students to consider multiple perspectives.

At the Apply and Analyze levels of Bloom's taxonomy, **Scientific Reasoning Activities** offer in-depth arguments to sharpen students' critical thinking skills and prepare them to be more discerning consumers of psychology in their everyday lives. For each chapter, there are multiple sets of arguments accompanied by auto-graded assessments requiring students to think critically about claims presented as facts. These exercises can also be used in Connect as group activities or for discussion.

New! Anatomy and Physiology REVEALED® for Psychology McGraw-Hill Education presents an interactive tool that encourages the exploration of biological structures related to psychology. Lab Activity assignments in Connect walk students through virtual nervous system and cell dissection experiences, including views of CT scans, x-ray imaging and histology, and include illustrated animations that link anatomy to the biology of behavior.



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Touring the Brain and Touring the Senses Two digital components, **Touring the Brain and Nervous System** and **Touring the Senses**, offer detailed digital overlays of key structures. These tours provide students with practice in grasping key biological structures and processes that are essential to an appreciation of the role of science in psychology and success in the course.

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

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

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Available with Connect, integration is a pairing between an institution's learning management system (LMS) and Connect at the assignment level. It shares assignment information, grades and calendar items from Connect into the LMS automatically, creating an easy to manage course for instructors and simple navigation for students. Our assignment-level integration is available with **Blackboard Learn**, **Canvas by Instructure**, and **Brightspace by D2L**, giving you access to registration, attendance, assignments, grades, and course resources in real time, in one location.

INSTRUCTOR SUPPLEMENTS

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

Test Bank By increasing the rigor of the test bank development process, McGraw-Hill Education has raised the bar for student assessment. A coordinated team of subject-matter experts methodically vetted each question and set of possible answers for accuracy, clarity, effectiveness, and accessibility; each question has been annotated for level of difficulty, Bloom's taxonomy, APA learning outcomes, and corresponding coverage

in the text. Organized by chapter, the questions are designed to test factual, conceptual, and applied understanding. All test questions are available within Test-Gen™ software and as Word documents.

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

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

CHAPTER-BY-CHAPTER CHANGES

In addition to global updates based on anonymous student Heat Map data across all chapters, chapter-by-chapter changes are listed below.

Chapter 1: Introduction to Psychology

- Moved section on critical thinking from Chapter 9 to Chapter 1 so students are introduced to it right up front and to better set the stage for challenging assumptions
- Added a Perspectives section, outlining and summarizing the 7 major theoretical perspectives in psychology
- Updated research throughout the text

Chapter 2: Conducting Research in Psychology

- New coverage of the logic of twin adoption designs
- New section on longitudinal design
- New material on scientific misconduct
- New material on replication movement in psychology
- New material on big data
- New key terms, including qualitative and quantitative design
- Revised discussion of surveys
- New Bringing It All Together on how social media affects thought and behavior

Chapter 3: The Biology of Behavior

- Updated research throughout chapter
- New material on genetics and epigenetics; genetics section condensed
- New brain imaging techniques
- New research on neuroprosthetics

Chapter 4: Sensing and Perceiving Our World

- Revised coverage of the gateway theory of pain
- Added literature and new discussion on individual differences in absolute and JND thresholds
- Updated coverage on why some are born with no pain receptors
- Added new material on the gustatory cortex
- Updated the section on hearing loss
- New research on neuroplasticity in deaf people
- Restructured vision section

Chapter 5: Human Development

- New material on the “Marshmallow Test”
- Revised discussion of intellectual disability
- New and revised coverage of gender identity with a focus on transgender identity
- Updated research on adolescent personality development

- Revised coverage of technology across lifespan
- Updated discussion of Piaget’s theory, including critique and limitations
- Revised coverage of attachment

Chapter 6: Consciousness

- Major updating of sections on attention and multitasking
- Major update to “Real World” section on distracted driving
- Updated sleep staging
- Extensive updates to the section on drugs

Chapter 7: Memory

- New chapter opening on cases dealing with super autobiographical memory, extreme number recall, implicit memory, and faulty eyewitness testimony
- Restructured the entire chapter to match current perspectives on memory with main sections now being:
 - Forming Memories
 - Types of Memory
 - Memory and the Brain
 - Memory Reconstruction and Distortion
 - Forgetting and Memory Loss
- Additional new material was added on eyewitness testimony and the case of Jennifer Thompson and Ronald Cotton

Chapter 8: Learning

- Updated examples on the effects of violence in movies and video games
- Updated coverage of the Little Albert story
- Updated coverage on how nature and nurture work together in learning
- Updated research on operant conditioning

Chapter 9: Language and Thought

- New chapter opening on becoming bilingual and thinking differently
- New research on advantages of being bilingual, chimp language, and culture, language and thought
- New material on fake news and critical thinking
- Updated graphic on concept hierarchy
- Updated research throughout chapter
- New key term “base-rate”

Chapter 10: Intelligence, Problem Solving, and Creativity

- New research on the greater connectivity between hemispheres and creative people
- New coverage on savants
- Revised coverage of fluid/crystalized intelligence and familial-cultural intellectual disability
- Updated research throughout the chapter
- New coverage of developmental changes in different aspects of intelligence

- Added coverage of assessing multiple intelligence
- New coverage of the brain's connectome and intelligence
- New coverage of default mode network: boredom, walking, and daydreaming

Chapter 11: Motivation and Emotion

- New meaningful graphic on weight loss maintenance
- Updated research throughout the chapter
- New connections across motivation and emotion
- Additional coverage of emotion and culture
- Expanded coverage of emotion and gender differences
- Revised and expanded coverage of eating disorders

Chapter 12: Stress and Health

- New chapter opener on the connection between stress and health
- New section on the gut-brain axis
- Updated research throughout chapter
- New coverage of current research on telomere length/telomerase and stress
- Revised coverage on good stress versus bad stress

Chapter 13: Personality: The Uniqueness of the Individual

- Updated research throughout chapter
- New research and examples on animal personality
- New research on personality and social media
- New chapter opener on five new (Big Five) personality vignettes/case studies
- New key terms, including “by-product” and “psychological mechanism”
- New section on evolutionary personality theory
- Updated table on perspectives on personality
- Revised discussion on perspectives on personality
- New meaningful graphic on the biology of introversion/extroversion
- Revised coverage of id, ego, superego, archetypes, the biological basis of introversion/extroversion, and face validity
- Revised coverage of situational consistency, twin studies, shared and unshared environments
- Revised discussion of the origins of personality

Chapter 14: Social Behavior

- Updated coverage of technology/social media and social cognition
- Revised coverage of groupthink to include 2016 research on fake news sites.
- Updated chapter opener
- Updated research on mere exposure effect
- New research on racism
- Major research updates about social networks to include contemporary U.S. and Asian research
- New glossary term of “dehumanization”

- New 2017 research conducted during the 2016 presidential campaign on prejudice toward Mexicans and anti-Muslim sentiment
- Added new research on cross-cultural findings and social perception

Chapter 15: Psychological Disorders

- Revised coverage of biological theories of depression
- Expanded discussion of the connection between schizophrenia and infection
- New section on gut microbes and the brain
- Updated coverage of Internet addiction
- Updated research throughout the chapter
- New section on connecting “learned helplessness” to the causes of depression
- Expanded discussion on the possible causes of obsessive-compulsive disorder

Chapter 16: Treatment of Psychological Disorders

- New chapter opener on microdosing for major depression
- Updated research throughout chapter, particularly in the areas of technology-based, biomedical, and emerging therapies
- New research on the shortcomings of SSRIs
- Revised coverage of deep brain stimulation for obsessive-compulsive disorder
- New coverage on electronic treatment of disorders, including virtual reality and therapy apps
- New section on psychedelic medicine



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Our thanks also go to the Editing, Design, and Production team: Sandy Wille, who guided us through the copyediting and composition stages of production; designer Matt Backhaus; and Content Licensing Specialist Lori Slattery. We also must thank copyeditor Julie Kennedy who offered invaluable advice in helping craft the language and clarify text. We also have been honored to have the invaluable input of our friends and colleagues—all experts in their fields—on various topics in the book. In particular, we are grateful to Paul Ekman, Elissa Epel, Jess Feist, David Galin, Mary Gomes, Lee Huntington, Allen Kanner, Alan Kaufman, James Kaufman, Lee Kirkpatrick, Katherine MacLean, Clifford Saron, Valerie Stone, and especially Mary True, who contributed her developmental expertise to important revisions in Chapter 5 on both the second and third editions of this book.

We have also benefited from having research support from our students Sarah Greene, Adam Larson, Spencer James, and Yvette Szabo. Yvette wrote a wonderful new piece for Chapter 1 on what Introduction to Psychology has meant for her. Our colleague Rebecca Jedel also caught some inaccuracies in the chapters on Learning and Personality in the previous edition, and we are thankful for that feedback. Sarah Butler helped us flesh out some of the research on sexuality. We extend our thanks also to Dean Simonton, who pointed out historical inaccuracies in the two-string problem discussion and graphic. We also thank our parents—Sandra Rosenberg and the late Jess and Mary Jo Feist—for their love and unending support throughout the writing of previous editions. We also want to give our special and heartfelt thanks to our two wonderful boys, Jerry and Evan. They have been real troopers throughout our work on all the editions. We owe Jerry an extra thanks for helping with some of the research for the 4th edition.

Erika would like to extend a very heartfelt “THANKS!” to every single student she has ever taught, in every class, who have been her greatest teachers in life. She is grateful to Stanley Marshall for his kindness and support throughout the writing of this edition. Erika would also like to thank her favorite local café, Bica Coffeehouse, for their superb coffees and lovely space that served as her primary office during her writing of the second, third, and fourth editions. Finally, Erika is also grateful to Phil and Jill Lesh for their Terrapin Crossroads—an enriching community of music and love—that has kept Erika sane and happy during both the difficult and easy times and has reinforced her faith in the power of community.

Greg would like to thank his thousands of Introductory Psychology students over the years who—with their questions and fresh interest—keep him on his toes and who constantly remind him of the fun and joy in learning how fascinating and perplexing human thought and behavior is and can be.

Finally, we were married 24 years and started this project when our children were young. Although we are no longer married, we remain deeply grateful to each other as co-authors and co-parents. We share an eternal personal and professional history, and are indebted to each other for the long-term collaboration on a book as complex as this one is—now entering its 4th edition and almost 15 years after we began work on the 1st edition. We have learned how to play off each other’s strengths, balance viewpoints and expertise, and compromise. With a collaboration like this one, we are ready for another 15 years!

1 Introduction to Psychology

Chapter Outline

What Is Psychology?

Subdisciplines of Psychology

The Origins of Psychology

**Psychological Perspectives: Explaining
Human Behavior**

**No One Perspective Tells the Whole Story
in Psychology**

Chapter Review

Challenge Your Assumptions

True or False?

- If you are a psychologist you diagnose and treat mental disorders. (see page 5)
- Psychology is made up of many different subfields. (see page 9)
- Genetic influence on our thoughts and actions is set at birth and can't be changed. (see page 18)
- Psychologists agree that most of human thought and behavior cannot be explained by one perspective. (see page 27)
- Critical thinking involves seeing only the weaknesses and flaws in ideas. (see page 27)



Over the last few years in the United States, numerous videos of police officers shooting African American males have been posted on various social media websites. Although these events all differ in circumstance and explanation, the videos have often led to protests of police behavior. These protests have even spilled over into professional sports, most notably when the football player Colin Kaepernick refused to stand during the playing of the national anthem. Whatever position one may take on the explanation and cause of these events, there is no doubt that the universal ownership of cell phones with cameras and widespread use of social media outlets have changed the dynamic between police and civilians and begun a full-blown debate about race and justice in the United States.

These examples give just a small hint of the wide-ranging ways that online technologies have changed social interaction and human behavior. Here are some others:

- Millions of people have free or very inexpensive access to online learning through massive open online courses (MOOCs), such as Udacity and Coursera.
- We can immediately be in contact with friends and family via texting and email, and with wider circles of people via Twitter, Facebook, Tumblr, and Reddit, to name a few.
- Online psychotherapies have helped many individuals and couples dealing with mental illness and broken relationships.
- Sexting photos have had traumatic effects on people's lives and even ruined politicians' careers.
- A baby died of malnutrition and neglect by a couple in South Korea who were spending 14–16 hours a day raising a virtual baby on the online site Prius Online.
- Distracted driving (much of which involves mobile device use) kills more than 3,000 Americans a year (more than 10 each day; *Distracted driving*, 2013).

In many ways, people behave online much the way they do in everyday life, but with the capacity to affect more people, both known and unknown, and potentially with more widespread impact. What happens to social interactions when they become primarily electronic? Do the depths of our friendships increase or decrease through social media? Does technology make our attention scattered, or does it improve our ability to do more than one thing at a time? These are important questions; our interactions and social connections, or *networks*, can influence everything from opinion to eating patterns to one's likelihood of quitting smoking (Christakis & Fowler, 2007, 2008). For example, socially isolated people are more prone to illness and even early death (Kim et al., 2016). Do Facebook and other social networks operate in ways that resemble real-world networks? What are the consequences of electronic interaction for our social lives? Each of these questions centers on understanding the effects of technology on thought, feeling, and behavior.

You might assume that social networks only enhance social life. The surprise from psychological science is that social networking both improves and impairs our relationships (Garrett & Danziger, 2008; Lundy & Drouin, 2016). People use “friending” on social networks to widen their social circles, which can translate into real-life social benefits (Lange, 2008). These media help us reach people we might not otherwise communicate with at all (such as long-lost cousins). Yet social networking can also reduce interactions with close friends to short electronic

statements and lessen the amount of face-to-face time. In addition, technology in general increases our likelihood to multitask, which makes it harder for us to engage in any one task deeply (Bowman et al., 2010; Foerde, Knowlton, & Poldrack, 2006; Werner, Cades, & Boehm-Davis, 2015). As psychology begins to identify the pros and cons of this overlap between real and virtual worlds, the ways to navigate this realm in a healthy manner become clearer.

You may be wondering why we are opening a text about psychology with a discussion of people's use of technology. The answer is that technology involves people thinking, behaving, and interacting, which is what psychology is all about.

WHAT IS PSYCHOLOGY?

In one sense, you have been a psychologist for most of your life. Every time you ponder why you think and feel in particular ways, you are thinking psychologically. Every time you try to explain what someone else is doing—and why—you are thinking psychologically. You do it when you say your friend dominates conversations because he is self-absorbed. You also do it when you conclude that your big sister is bossy because she is older and always gets what she wants. We think and live psychology every day.

Psychology Defined

Many fields of study aim to understand people's thoughts and actions. Literature helps us understand people through storytelling, character exploration, development of setting, and use of imagery. History helps us understand people through description and analysis of past events and artifacts. Anthropology is the study of human culture and origins. Sociology seeks to understand people in terms of large-scale social forces and group membership rather than individuals. Psychology is unique in that it is the *science* of understanding individuals—animals as well as people. Formally defined, **psychology** is the scientific study of thought and behavior. The root word *psyche* comes from the Greek for “mind,” but modern psychology is as likely to study the brain and behavior as it is the “mind.”

You might be thinking, Don't psychologists treat people with mental illness or try to help us figure out how our parents messed us up? Yes, they do these things too. Some professional psychologists practice, or *apply*, psychology to diagnose and treat problems of thought and behavior. In fact, psychology is both a clinical practice and a science. The clinical practice side encompasses the services provided in therapists' offices, schools, hospitals, and businesses. Without fail, when we (the authors of this text) tell people that we are psychologists, they immediately think we are clinical psychologists and are analyzing their every move, looking for hidden meaning in everything they do.

You can also find popular psychology in homes, on radio talk shows, on Internet news sites, and in TV news reports. What sets scientific psychology apart from popular psychology—known as *pop psychology*—are the methods used in each. As you will see in the chapter “Conducting Research in Psychology” and again in the chapter “Treatment of Psychological Disorders”, the methods of scientific and clinical psychologists are quite different from people in general, who sometimes draw from an unreliable body of knowledge known as *common sense*.

psychology
The scientific study of thought and behavior.

Challenge Your Assumptions

True or False? If you are a psychologist, you diagnose and treat mental disorders.

False: Some psychologists diagnose and treat mental illness but others conduct scientific studies on human thought and behavior. Psychology is both a practice and a science.

Psychology in the Real World

Why Psychology Is Important to My Life

Yvette Szabo, *University of Louisville*

For me, studying psychology has meant so much more than learning concepts for an exam. Every day I see how it applies to my life. Material from class and the textbook come alive in my daily encounters. For instance, I now understand what affects my own productivity and what increases my motivation. I know that stress sometimes serves as a major stimulant for me and activates me to work, but it also wears down my immune system. Also, too much stress impairs the quality of my work. From Intro Psych, I learned that these experiences are consistent with what research on motivation, stress, and health tells us.

I have also noticed how patterns of behavior repeat themselves within families or groups of friends. When I learned about the effects of birth order on personality, for example, I was able to connect the concept to my sister and me. I am the younger sister, and I am more rebellious and open to new ideas. In contrast, my elder sister is more agreeable and has a more cautious personality. When I learned in Intro Psych that younger-born children are “born to rebel” [see the chapter “Personality: The Uniqueness of the Individual”], I was amazed to discover that the pattern I see with my sister and me is a common one. This has helped put my own life in a larger context of human behavior.

As a curious student, I always enjoy understanding something new. One thing I appreciated with this class is

how all of the fields of psychology overlap and interconnect. For example: Different people see and perceive events differently. In other words, social and personality psychology are closely connected to memory, sensation, and perception. What we perceive and remember overlaps with our social environment and our personality. Perceiving and remembering is almost like a camera lens, but the lens has filters—your personality and previous experiences filter what you take in, what sense you make of it, and what you recall.

Additionally, for me, connections between the subfields are clearer when I look at an area that interests me—diagnoses and treatments for depression. In order to understand both the causes of and treatments for depression, you need to appreciate how the biological origins of depression, such as hormones and neurotransmitters, are affected by life experiences, such as stress and trauma. If we don’t integrate the biological and social approaches to understanding disorders, then we won’t be very successful at diagnosing and treating them.

Moreover, psychology often explores the roles of nature and nurture in shaping behavior and personality. This book in particular does a great job of emphasizing how nature and nurture work together to create who we are and who we become. I have seen this firsthand. My cousin, adopted by my uncle and his wife, developed mannerisms similar to those of her family members. And yet, I’ve also learned in class that twins separated at birth will likely

Perhaps because of the ubiquity of popular psychology, most people you talk to on the street don’t think of psychology as a science; rather, they probably think of it only as a clinical practice. The editors of *Scientific American*, for instance, commented that “whenever we run articles on social topics, some readers protest that we should stick to ‘real science’” (“The peculiar institution,” 2002, p. 8).

As we will see throughout this text, not only is psychology a science, but it is also considered a core science, along with medicine, earth science, chemistry, physics, and math (Boyack, Klavans, & Börner, 2005). Core sciences are those that have many other disciplines organized around them.

Why Should You Study Psychology?

Reasons for studying psychology vary from person to person. Maybe your adviser suggested it would be a good course to take, or maybe you’re taking the course because it satisfies a general education requirement. Psychology is considered part of a good general education because its content is useful to many fields. It is also relevant to your life.

Adopting a scientific perspective on human behavior helps you develop a curiosity for how behavior works. It also fosters an appreciation for how much of

have similar interests and characteristics. These examples both show that nature and nurture are intertwined.

My knowledge of psychology provides constant explanations for the kinds of relationships I see all around me. For example, as I learned in my psychology courses, research shows that children who were bullied at home will be more likely to befriend someone meek so they can achieve dominance. Sure enough, a close friend of mine recently admitted she was a bully in grade school because it was the one place she was tougher than those around her. At home she was picked on, and so she wanted to dominate when she could at school. Psychology allowed me to better understand this not-so-desirable behavior in my friend. Similarly, I learned that people who do not receive much human contact and were not held as children will likely have difficulty forming bonds and close attachments as adults. I have seen this play out among numerous friends and acquaintances. Both of these cases show the importance of caregiving behavior in the formation of social relationships.

By turning what I learn in my classes outward, I can better understand the actions of others. I am more effective at motivating others and myself, because I better understand individual differences and different types of motivation that stem from internal and environmental sources. I am more conscious about what motivates me. Sometimes I am more motivated by an internal source, such

as when I participate in a sport because I enjoy the game. Other times, I am more motivated by external sources, such as when I work to earn a high grade in a class.

Most importantly, the things I learned in Introductory Psychology have laid a foundation for all my future studies in psychology and even other courses. As I have studied more about the clinical applications of psychology, I have become more conscious of the role of a listener and speaker and have greatly improved my listening skills. Psychology has taught me techniques for learning, like scheduling study time over several days, getting a good night's sleep, rehearsing material, and making information personal and relevant. Intro Psych can help you not only to understand other people but also to do well in college.

Psychology has helped me so much in my everyday life that I want to continue to take as many psychology classes as I can and then pursue a doctoral degree in psychology. My motivation to learn more than what is required originated from the sampling of fields covered in introductory psychology. It is only in Intro Psychology where you learn about everything in psychology—from the brain and genetics to learning, memory, and perception; from development and aging to social groups and disorders of the mind. Intro Psych has been a wonderful foundation for understanding my own and other people's thought and behavior—and after all, isn't that what psychology is all about?

Yvette Szabo, University of Louisville. Used by permission.

human thought and behavior cannot be explained from one perspective. As you move through this text, you will find that many of the concepts you learn, such as memory, have several definitions depending on how you look at them. *Memory*, for instance, can refer either to a specific recalled event (such as your memory of last summer's vacation) or to the process by which we recall such information.

Studying psychology not only makes you more aware of how people work in general, but it also makes you more aware of how *you* work—very practical knowledge to have in many settings. Understanding others' thoughts, feelings, and motives—as well as your own—may help you be a more effective doctor, lawyer, businessperson, or friend. Understanding how children learn, think, reason, and play will help you if you become a parent or a teacher. To learn how one recent college graduate has applied her knowledge of psychology in her life, read the “Psychology in the Real World” feature.

The study of psychology is as old as the human species. Before people wondered about the stars, rocks, and planets, no doubt they tried to figure out themselves and others.



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They did, after all, form relationships, have children, and protect their families. Human babies could not survive without others to care for them. Perhaps that is why people fascinate us. From our very first days, we humans are inherently interested in other humans—for survival. Newborns prefer faces to almost any other object. Our very existence is social, and as you will learn, our brains have evolved mechanisms and structures that allow us to understand others in a remarkably complex way (Dunbar, 1996; Frith & Frith, 2010).

As you begin your study of psychology, you will learn just how broad the field is. You may even find a subfield that dovetails with another interest you have already developed.

Quick Quiz 1: What Is Psychology?

1. Psychology is best defined as the scientific study of
 - a. human behavior.
 - b. mental illness.
 - c. neuroses.
 - d. human thought and behavior.
2. As a field, psychology is
 - a. a social science.
 - b. the practice of diagnosing and treating mental illness.
 - c. a biological science.
 - d. all of the above.
3. How does psychology differ from the related field of sociology?
 - a. Psychology studies systems; sociology studies cultures.
 - b. Psychology studies cultures; sociology studies people.
 - c. Psychology studies individuals; sociology studies groups.
 - d. Psychology studies groups and cultures; sociology studies human behavior.

Answers can be found at the end of the chapter.

SUBDISCIPLINES OF PSYCHOLOGY

As a science and a practice, psychology is divided into various areas of investigation. Just as this book consists of chapters on different topics in psychology, the field of psychology is divided into more than 25 distinct, but increasingly interrelated, subdisciplines. Figure 1 gives a breakdown of the percentages of doctorates awarded in 2014 in each of the major subdisciplines we discuss (Doctorate Recipients, 2016). It is noteworthy, that 71% of all PhDs in psychology in 2014 were earned by women. Each subdiscipline in psychology had more than 50% women PhDs, and the only two subfields with less than 60% were experimental psychology and cognitive/psycholinguistics. It is also worth noting that more PhDs were awarded in psychology in 2014 than all the other social sciences combined (anthropology, economics, political science, and sociology) (Doctorate Recipients, 2016).

Cognitive psychology is the study of how we perceive information, how we learn and remember, how we acquire and use language, and how we solve problems. For example, a researcher who is concerned with how people visualize objects in their minds is studying cognitive psychology. Those who do research on cognition and learning are often referred to as *experimental psychologists*, because they conduct laboratory experiments to address their research questions.

Developmental psychology explores how thought and behavior change and show stability across the life span. This developmental perspective allows us to appreciate that organisms—human or otherwise—change and grow. Developmental psychologists ask such questions as these: How do our reasoning skills or emotional skills change as we age? How does parent-infant bonding affect adult relationships? Does old age bring wisdom?

Behavioral neuroscience studies the links among brain, mind, and behavior. Neuroscience cuts across various disciplines and subdisciplines of psychology. One can study the brain functions involved in learning, emotion, social behavior, and mental illness, to name just a few areas. The more general subdiscipline of **biological psychology** includes research on all areas of connection between

cognitive psychology

The study of how people perceive, remember, think, speak, and solve problems.

developmental psychology

The study of how thought and behavior change and remain stable across the life span.

behavioral neuroscience

The study of the links among brain, mind, and behavior.

biological psychology

The study of the relationship between bodily systems and chemicals and how they influence behavior and thought.

bodily systems and chemicals and their relationship to behavior and thought. An example of research in biological psychology appears in the chapter “Stress and Health”, where we discuss the effects of stress on hormones and behavior. Neuroscience and biological psychology overlap substantially. Biological psychology is an older term that is being replaced by *behavioral neuroscience* in contemporary psychology. Using noninvasive advanced imaging techniques and electrical recordings, behavioral neuroscientists study the structure and functions of the living brain.

Personality psychology considers what makes people unique, as well as the consistencies in people’s behavior across time and situations. Personality research addresses questions such as whether our personal traits and dispositions change or stay the same from infancy to childhood to adulthood. A question from this area, for example, might be whether the tendency to be friendly, anxious, or hostile affects one’s health, career choice, or interpersonal relationships or whether a friendly or anxious child will necessarily have the same characteristics as an adult.

Social psychology considers how the real or imagined presence of others influences thought, feeling, and behavior. Research on prejudice and racism, for example, looks at how a person of one group perceives and treats people in other groups. Social psychologists ask such questions as these: How does the presence of other people change an individual’s thoughts, feelings, or perceptions? Why is someone less likely to help a person in need when there are many people around than when there is no one else around? Why are we attracted to particular kinds of people?

Clinical psychology focuses on the diagnosis and treatment of mental, emotional, and behavioral disorders and ways to promote psychological health. Some

clinical psychologists also conduct research and teach. Clinical psychologists work in universities, medical settings, or private practice. As you can see from Figure 1, clinical psychology is the single largest subdiscipline in psychology. In the United States, since the late 1940s, the main approach to training in psychology has been the scientist-practitioner model, in which people with PhDs in clinical psychology should be both therapists and researchers—or at least be trained to be both (Benjamin, 2007). Psychology is a practice as well as a science.

A related field is *counseling psychology*. Counseling psychologists tend to work with less severe psychological disorders than clinical psychologists. They treat and assess relatively healthy people and assist them with career and vocational interests. Training for

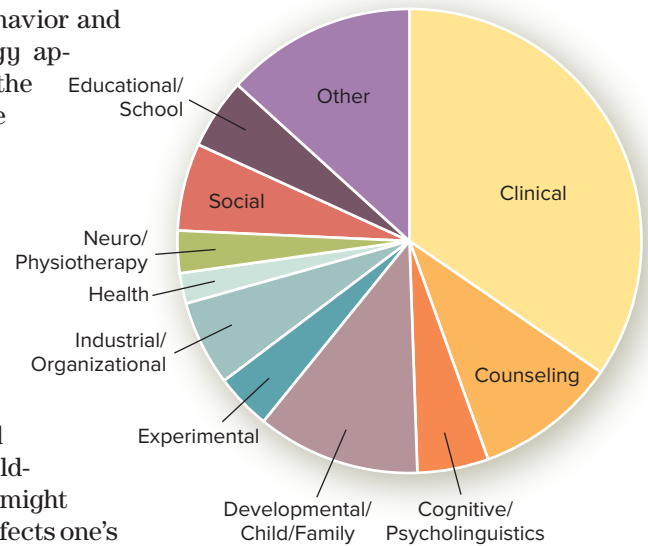


FIGURE 1
PERCENTAGE OF PhDs
AWARDED IN THE SUBFIELDS OF
PSYCHOLOGY IN 2014. (Adapted
from Doctorate Recipients, 2016)

personality psychology

The study of what makes people unique and the consistencies in people’s behavior across time and situations.

social psychology

The study of how living among others influences thought, feeling, and behavior.

clinical psychology

The diagnosis and treatment of mental, emotional, and behavioral disorders and the promotion of psychological health.



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The woman wearing goggles and headgear is being prepared for a neuroimaging exam in a neuroscience lab.

Challenge Your Assumptions

True or False? Psychology is made up of many different subfields.

True: Psychology has many subfields and is not just one overall discipline. Each subfield examines an important component of thought and behavior, such as cognition, personality, or social influence.