

PSYCHOLOGY

PERSPECTIVES AND CONNECTIONS 3E



GREGORY J. FEIST

ERIKA L. ROSENBERG

Mc
Graw
Hill
Education

PSYCHOLOGY

Perspectives and Connections

PSYCHOLOGY

PERSPECTIVES AND CONNECTIONS | 3E



Mc
Graw
Hill
Education

GREGORY J. FEIST

ERIKA L. ROSENBERG



THIRD EDITION

PSYCHOLOGY

Perspectives and Connections

Gregory J. Feist

San Jose State University

Erika L. Rosenberg

University of California, Davis

Mc
Graw
Hill
Education



PSYCHOLOGY: PERSPECTIVES AND CONNECTIONS, THIRD EDITION

Published by McGraw-Hill Education, 2 Penn Plaza, New York, NY 10121. Copyright © 2015 by McGraw-Hill Education. All rights reserved. Printed in the United States of America. Previous editions © 2012, 2010. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of McGraw-Hill Education, including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOW/DOW 1 0 9 8 7 6 5

ISBN 978-0-07-786187-2

MHID 0-07-786187-6

Senior Vice President, Products & Markets: *Kurt L. Strand*

Vice President, General Manager, Products & Markets:

Michael Ryan

Vice President, Content Design & Delivery: *Kimberly*

Meriwether David

Managing Director: *William Glass*

Executive Director: *Krista Bettino*

Senior Brand Manager: *Nancy Welcher*

Director, Product Development: *Meghan Campbell*

Product Developer: *Betty Chen*

Marketing Managers: *Ann Helgerson; AJ Laferrera*

Lead Product Developer: *Dawn Groundwater*

Digital Product Analyst: *Neil Kahn*

Director, Content Design & Delivery:

Terri Schiesl

Program Manager: *Debra Hash*

Content Project Manager: (core) *Sandy Wille;*

(assessment) *Jodi Banowetz*

Buyer: *Laura M. Fuller*

Design: *Trevor Goodman*

Content Licensing Specialists: *John Leland (photo);*

Shirley Lanners (text)

Cover Image: *Getty RM © Matthias Clamer*

Compositor: *MPS Limited*

Printer: *R. R. Donnelley*

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

Library of Congress Cataloging-in-Publication Data

Feist, Gregory J.

Psychology: perspectives and connections/Gregory J. Feist, San Jose State University;

Erika L. Rosenberg, University of California, Davis.—Third edition.

pages cm

Includes index.

ISBN 978-0-07-786187-2 (alk. paper)

1. Psychology. I. Rosenberg, Erika L. II. Title.

BF121.F32 2015

150—dc23

2014022576

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw-Hill Education, and McGraw-Hill Education does not guarantee the accuracy of the information presented at these sites.

To our most precious collaborative work,
Jerry and Evan

About the Authors



Gregory J. Feist

Gregory J. Feist is Associate 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, 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 father, Jess Feist (and Tomi-Ann Roberts), of the undergraduate text *Theories of Personality*. In his spare time, Dr. Feist enjoys cycling and skiing.

Married to Erika Rosenberg, Dr. Feist is the father of Jerry and Evan.



Erika L. Rosenberg

Erika L. Rosenberg is an emotions researcher, health psychologist, and teacher of meditation. Her research on emotion has examined how feelings are revealed in facial expressions, how social factors influence emotional signals, and how anger affects cardiovascular health. 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, and currently is at the Center for Mind and Brain at the University of California,

Davis, where she is a senior investigator on the Shamatha Project, a multidisciplinary study of how intensive meditation affects cognition, emotion, and neurophysiology. She is a co-author of studies from this project, which are published in *Psychological Science*, *Emotion*, and *Psychoneuroendocrinology*.

Dr. Rosenberg is a world-renowned expert in facial expressions measurement using the Facial Action Coding System (FACS). She consults with scientists, artists, and the entertainment industry on the use of FACS in a variety of contexts, including her role as scientific consultant on the Fox TV show *Lie to Me*. She teaches FACS workshops worldwide.

A longtime practitioner of meditation, Erika Rosenberg serves on the faculty of Nyingma Institute of Tibetan Studies in Berkeley, where she teaches meditation courses and workshops for working with emotions in daily life. Recently, Erika helped develop a secular compassion-training program with Geshe Thupten Jinpa, PhD, at the Center for Compassion and Altruism Research and Education at Stanford University, where she is a senior teacher. Dr. Rosenberg has presented this program to His Holiness the Dalai Lama and taught the program at Google and throughout the Bay Area, and she now co-directs the Compassion Cultivation Teacher Training Program. Dr. Rosenberg is also a Senior Fellow at the Mind and Life Institute.

Dr. Rosenberg and her husband, Greg Feist, have two sons, Jerry and Evan. They live in the San Francisco Bay Area.

Brief Contents

- 1 Introduction to Psychology** 2
- 2 Conducting Research in Psychology** 32
- 3 The Biology of Behavior** 70
- 4 Sensing and Perceiving Our World** 116
- 5 Human Development** 158
- 6 Consciousness** 208
- 7 Memory** 248
- 8 Learning** 284
- 9 Language and Thought** 322
- 10 Intelligence, Problem Solving, and Creativity** 356
- 11 Motivation and Emotion** 394
- 12 Stress and Health** 442
- 13 Personality: The Uniqueness of the Individual** 476
- 14 Social Behavior** 512
- 15 Psychological Disorders** 548
- 16 Treatment of Psychological Disorders** 588

Contents

Foreword by Paul Ekman xxi

Preface: Don't Believe Everything You Think xxii

1 Introduction to Psychology 2

What Is Psychology? 5

Psychology Defined 5

Why Should You Study Psychology? 6

Psychology in the Real World: Why Psychology Is Important to My Life 7

Subdisciplines of Psychology 8

The Origins of Psychology 11

A Brief History of the Practice of Clinical Psychology 11

A Brief History of Scientific Psychology 14

Ways of Thinking about Mind, Body, and Experience 20

The Nature-Nurture Debate 20

Mind-Body Dualism 21

The Evolution of Human Behavior 22

No One Perspective Tells the Whole Story in Psychology 26

Challenge Assumptions: Don't Believe Everything You Think 26

Connections within and between Chapters 27

Bringing It All Together: Making Connections in Psychology 28

Chapter Review 30



2 Conducting Research in Psychology 32

The Nature of Science 35

Common Sense and Logic 35

The Limits of Observation 35

What Is Science? 36

The Scientific Method 38

Research Process 39

What Science Is Not: Pseudoscience 40



Research Methods in Psychology 41

Principles of Research Design 41

Descriptive Studies 42

Meta-Analysis 46

Correlational Studies 47

Experimental Studies 49

Challenging Assumptions in the Objectivity of Experimental Research 53

Commonly Used Measures of Psychological Research 54

Self-Report Measures 54

Behavioral Measures 56

Physiological Measures 57

Making Sense of Data with Statistics 57

Descriptive Statistics 58

Inferential Statistics 59

[Psychology in the Real World: Challenge the Assumptions of Advertisers' Statistics](#) 60

Research Ethics 62

Ethical Research with Humans 62

Ethical Research with Animals 64

Bringing It All Together: Making Connections in Psychological Research 66

Chapter Review 67

3 The Biology of Behavior 70



Genes and Behavior 73

The Complex Connection between Genes and Behavior 74

Polygenic Influence on Behavior 75

Genes and the Environment 75

Epigenetics: How the Environment Changes Gene Expression 76

The Nervous System 78

Organization of the Nervous System 78

The Cells of the Nervous System: Glial Cells and Neurons 79

Common Neurotransmitters 85

Summary of the Steps in Neural Transmission 89

The Brain 90

Evolution of the Human Brain 90

Overview of Brain Regions 92

Psychology in the Real World: Brain-Computer and
Brain-Machine Interfaces 99

Brain Plasticity and Neurogenesis 100

Challenging Assumptions about Neural Growth in the Adult Brain 104

Early Evidence of Neurogenesis in Adults 104

Key Figures in the Discovery of Neural Growth
in Adults 104

Measuring the Brain 106

Electroencephalography 106

Magnetic Resonance Imaging (MRI) and Functional
MRI (fMRI) 106

Positron Emission Tomography (PET) 107

Research Process 108

The Endocrine System 109

Bringing It All Together: Making Connections in the Biology
of Behavior 111

Chapter Review 113

4 Sensing and Perceiving Our World 116

The Long, Strange Trip from Sensation to Perception 119

Basic Sensory Processes 119

Principles of Perception 119

Vision 123

Sensing Visual Stimuli 123

Perceiving Visual Stimuli 130

Organizing Visual Information: The Gestalt Laws
of Grouping 134

Perceiving Color 138

Hearing 140

The Physics of Sound and the Psychology
of Hearing 140

The Ear 142

Psychology in the Real World: Hearing Loss Can Happen
in Young People Too 143

Hearing in the Brain 143

The Bodily Senses 144

Touch 145

Pain 145



The Chemical Senses: Smell and Taste 148

Smell (Olfaction) 148

Taste 149

Synesthesia 151

Bringing It All Together: Making Connections in Sensation and Perception 152

Research Process 154

Chapter Review 156

5 Human Development 158



The Developing Fetus 161

Stages of Prenatal Development 161

Brain and Sensory Development before Birth 162

Nature and Nurture Influences on Fetal Development 165

Prenatal Personality Development 166

The Developing Infant and Child 167

Physical Development in Infancy and Childhood 167

Early Cognitive Development 171

Psychology in the Real World: Musical Training Changes the Brain 172

Development of Moral Reasoning 178

Research Process 179

Personality Development during Infancy 181

Early Socioemotional Development 181

The Developing Adolescent 187

Physical Development in Adolescence 188

Cognitive and Brain Development in Adolescence 188

Social Development in Adolescence 191

The Developing Adult 193

Early Adulthood 193

Middle Adulthood 197

Late Adulthood 198

Death and Dying 201

Bringing It All Together: Making Connections in Human Development 202

Chapter Review 206

6 Consciousness 208

What Is Consciousness? 210

Two Dimensions of Consciousness: Wakefulness and Awareness 211

Minimal Consciousness 212

Moderate Consciousness 213

Full Consciousness 213

Attention: Focusing Consciousness 214

Selective Attention 214

Sustained Attention 216

Multitasking: The Implications of Shifting Attention 217

Psychology in the Real World: Hazards of Using a Mobile Device or Texting While Driving 218

Training Consciousness: Meditation 220

Meditation and Conscious Experience 221

Meditation Training and the Brain 221

Sleeping and Dreaming 222

Sleeping 222

Research Process 223

Dreaming 231

Hypnosis 233

Altering Consciousness with Drugs 236

Depressants 236

Stimulants 240

Hallucinogens 242

Bringing It All Together: Making Connections in Consciousness 245

Chapter Review 246



7 Memory 248

Three Types of Memory 251

Sensory Memory 253

Short-Term, or Working, Memory 254

Long-Term Memory 257

The Biological Basis of Memory 264

The Neural Basis of Memory 265



Psychology in the Real World: Manipulating Memory with Drugs and Drinks 266

Challenging Assumptions in Brain Stimulation and Memory 268

The Sensory Cortexes 269

Research Process 270

Pathways of Short-Term Memory in the Hippocampus and Prefrontal Cortex 271

Long-Term Memory Storage in the Cortex 271

Emotion, Memory, and the Brain 273

Forgetting and Memory Loss 276

Forms of Forgetting 276

Memory Loss Caused by Brain Injury and Disease 279

Bringing It All Together: Making Connections in Memory 280

Chapter Review 282

8 Learning 284



Basic Processes of Learning 287

Association 287

Conditioning Models of Learning 287

Classical Conditioning 288

Operant Conditioning 292

Challenging Assumptions about Conditioning Models of Learning 301

Social Learning Theory 306

The Interaction of Nature and Nurture in Learning 310

Imprinting 311

Imitation, Mirror Neurons, and Learning 312

Research Process 313

Psychology in the Real World: Sleep Facilitates Learning 314

Synaptic Change during Learning 314

Experience, Enrichment, and Brain Growth 316

Bringing It All Together: Making Connections in Learning 317

Chapter Review 319

9 Language and Thought 322

Language 325

- The Nature of Language 325
- The Evolution of Language in Humans 326
- Language Development in Individuals 326
- Theories of Language Acquisition 329
- Can Other Species Learn Human Language? 333
- Language, Culture, and Thought 335

Thinking, Reasoning, and Decision Making 337

Research Process 338

- How Do We Represent Thoughts in Our Minds? 339
- How Do We Reason about Evidence? 342
- Critical Thinking 344
- How Do We Make Judgments and Decisions? 345

Psychology in the Real World: Applying Critical Thinking beyond the Classroom 346

Bringing It All Together: Making Connections in Language and Thought 352

Chapter Review 354



10 Intelligence, Problem Solving, and Creativity 356

Intelligence 358

- Defining Intelligence 359
- Theories of Intelligence 359
- Measuring Intelligence 363

Psychology in the Real World: Bringing Multiple Intelligences to School 364

- Extremes of Intelligence 369
- The Nature and Nurture of Human Intelligence 373
- Group Differences in Intelligence Scores 377
- Non-Western Views of Intelligence 378

Problem Solving 379

- Types of Problems 380
- Solution Strategies 381
- Obstacles to Solutions 382

Creativity 383

- What Is Creativity? 383



Stages of Creative Problem Solving	384
Creativity and the Brain	384
Research Process	386
Cognitive Processes in Creative Thinking	387
The Creative Personality	388
Bringing It All Together: Making Connections in Intelligence, Problem Solving, and Creativity	389
Chapter Review	391

11 Motivation and Emotion 394



Motivation 397

Models of Motivation	397
Hunger: Survival of the Individual	401
Sex: Survival of the Species	407
Research Process	410
The Needs to Belong and to Excel	413
Motivation in the Workplace	415

Emotion 418

What Are Emotions?	418
Emotion as a Process	422
Psychology in the Real World: Botox and Emotion	430
Emotion and the Brain	431
How Culture Impacts Emotion Expression	433
Gender and Emotion	434
Emotional Intelligence	435
Bringing It All Together: Making Connections in Motivation and Emotion	437

Chapter Review 439

12 Stress and Health 442



Stress 444

Stress as Stimulus or Response	445
The Physiology of Stress	447

Coping 453

Coping Strategies	453
The Positive Psychology of Coping	456
Psychology in the Real World: Does Stress Cause Aging?	458

How Stress and Coping Affect Health 459

The Birth of Psychoneuroimmunology 461

Psychological Risk Factors for Heart Disease 464

Research on Health-Relevant Behavior 466

Research Process 470

Bringing It All Together: Making Connections in Stress and Health 472

Chapter Review 473

13 Personality: The Uniqueness of the Individual 476

Defining Personality 478

The Nature and Nurture of Personality 480

The Evolution of Personality Traits 480

Genetics and Personality 481

Temperament and the Fetal Environment 483

Personality and Culture: Universality and Differences 483

Challenging Assumptions in Animal Personality 485

How Do Theorists Explain Personality? 487

Psychoanalytic Theories 487

Humanistic-Positive Psychological Theories 494

Social-Cognitive Learning Theories 496

Trait Theories 496

Biological Theories 498

How Is Personality Measured? 500

Behavioral Observation 500

Interviewing 501

Projective Tests 501

Personality Questionnaires 501

Social Network Measurement of Personality 502

Psychology in the Real World: Personality and Career Interest and Job Performance 504

Bringing It All Together: Making Connections in Personality 506

Research Process 509

Chapter Review 510



14 Social Behavior 512



Group Living and Social Influence 515

- Conformity 515
- Minority Social Influence 517
- Obedience 518

Social Perception 521

- Attribution 521
- Detecting Deception 522
- Schemas 523
- Stereotypes 523
- Exclusion and Inclusion 524

Psychology in the Real World: The Social Psychology of Social Networks 526

- Prejudice and Discrimination 526
- Challenging Assumptions in Social Behavior 528

Attitudes and Behavior 529

- The Nature and Nurture of Attitudes 530
- Attitude Change 530

Social Relations 533

- The Nature and Nurture of Aggression 533
- Prosocial Behavior 535
- Liking, Attraction, and Love 539

Research Process 540

Bringing It All Together: Making Connections in Social Behavior 544

Chapter Review 546

15 Psychological Disorders 548



Defining Psychological Disorders 551

Neurodevelopmental Disorders 555

- Subtypes of Neurodevelopmental Disorders 555
- Causes of Neurodevelopmental Disorders 556

Schizophrenia 558

- Major Symptoms of Schizophrenia 558
- Nature and Nurture Explanations of Schizophrenia 559

Depressive Disorders 563

- Nature and Nurture Explanations of Depression 565

Research Process 566

Bipolar Disorder 567

Causes of Bipolar Disorder 568

Anxiety Disorders 569

Generalized Anxiety Disorder 570

Panic Disorder 570

Social Phobia (Social Anxiety Disorder) 571

Agoraphobia 571

Specific Phobias 572

Nature and Nurture Explanations of Anxiety Disorders 572

Obsessive-Compulsive Disorder 574

Causes of Obsessive-Compulsive Disorder 575

Post-Traumatic Stress Disorder 575

Dissociative Disorders 576

Dissociative Identity Disorder 576

Causes of Dissociative Disorders 577

Somatic Symptom Disorders 577

Personality Disorders 578

Odd-Eccentric Personality Disorders 578

Dramatic-Emotional Personality Disorders 579

Anxious-Fearful Personality Disorders 580

Nature and Nurture Explanations of Personality Disorders 580

Psychology in the Real World: Can Internet Use
Become an Addiction? 582

Bringing It All Together: Making Connections
in Psychological Disorders 583

Chapter Review 585

16 Treatment of Psychological Disorders 588

Biomedical Treatments for Psychological Disorders 590

Drug Therapies 591

Psychosurgery 595

Electric and Magnetic Therapies 595

Challenging Assumptions in the Treatment of Severe
Depression 597

Effectiveness of Biomedical Treatments 598

Psychological Treatments for Psychological Disorders 600



Psychoanalytic Therapy 600
Humanistic/Positive Therapy 602
Behavior Therapies 603
Cognitive and Cognitive-Behavioral Treatments 603
Group Therapy 605
Effectiveness of Psychological Treatments 607
Research Process 608

Technology-Based Treatments for Psychological Disorders 609

Effectiveness of Technology-Based Therapy 610

Combined Approaches 610

Drugs and Psychotherapy 610

Integrative Therapy 610

Mindfulness Training and Psychotherapy 611

Effectiveness of Combined Approaches 612


Psychology in the Real World: How to Choose a Therapist 614

Emerging Therapies 614

Preventing Disorders 617

Bringing It All Together: Making Connections
in the Treatment of Psychological Disorders 618

Chapter Review 620

 McGraw-Hill Psychology's APA Style
Documentation Guide

Glossary G-1

References R-1

Credits C-1

Name Index NI-1

Subject Index SI-1

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 Chapter 11, “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.”

Don't Believe Everything

Virtually all of our students enter Introductory Psychology with a full set of preconceived notions—many of them incorrect. *Psychology: Perspectives and Connections* is designed to move students beyond what may seem obvious to them, to have them reevaluate the thoughts and beliefs they bring to the course.

Students often think they already “know” psychology. They sometimes *think* “psychology is just common sense.” Perhaps they *believe* that human behavior is simply a by-product of heredity. Or perhaps they think that all they need to know about psychology is best learned by reading words on a page or a screen.

With this in mind, we challenge our students: *Don't believe everything you think.* We encourage students to question preconceived notions, putting their ideas—and the ideas of others—to the test. Through text that is one component of a rich, digital environment, we *engage* students in thinking critically. We continually demonstrate the importance of challenging assumptions and experiences—whether as a student or as a researcher—to understand that *no one perspective tells the whole story.*

CHALLENGING ASSUMPTIONS

Psychology: Perspectives and Connections helps students understand the path to discovery by challenging their assumptions, moving beyond “black-and-white” thinking. With this in mind, each chapter begins with **Challenge Your Assumptions.** We pose assertions such as “Pulling an all-nighter is a good way to study for an exam” or “Eyewitness memories are usually accurate,” prompting students to question their own perspective and begin to understand the importance of thinking critically. Responses to these assertions can be found in call-outs throughout the chapter.

Challenge Your Assumptions

True or False? Craving sweet, fatty, and salty foods is a socially and culturally determined preference.

False: The fact that we crave basic foodstuffs is very much a product of evolution.

were scarce during ancestral times: sugar, salt, and fat. The fast-food industry capitalizes on this fact by creating foods that are rich in these substances (Moss, 2013). Companies conduct research to determine precisely the optimal levels of flavors that people crave—the so-called bliss point. Sweets and fats are no longer scarce in industrialized society, and their easy access and overconsumption contribute to increasing problems of obesity.

Our choice of what we eat is also driven by culture. That some people eat cows and others worms is, for the most part, culturally determined. Different cultures expose children to different flavors. Different cultures expose children to unique flavor combinations or shape food preferences while people are young. For instance, people in very cold climates commonly eat raw animal fat: Icelanders eat raw whale blubber pickled in whey; the Inuit eat raw seal fat. In contrast, cow brains and tongue are commonly eaten in Mexico. Exposure does not immediately lead to preference, however (Pliner, 1982; Rozin, 1996). It often takes multiple exposures before children will come to like a food that they initially disliked (Birch & Fisher, 1996; Birch & Marlin, 1982). The more often people eat certain foods, the more they like them. Once people develop a preference for a kind of food, they are motivated and even driven to eat that kind of food. If you develop a strong liking for Mexican food, but then spend a year studying in

METACOGNITION

How many students *think* they know what they know but struggle on the first exam? McGraw-Hill's adaptive technology uses continual assessment and artificial intelligence to personalize the learning experience for each student.

LearnSmart® maximizes learning productivity and efficiency by identifying the most important learning objectives for each student to master at a given point in time. It knows when students are likely to forget specific information and revisits that content to advance knowledge from their short-term to long-term memory. Data-driven reports highlight the concepts with which individual students—or the entire class—is struggling. LearnSmart is proven to improve academic performance—including higher retention rates and better grades.

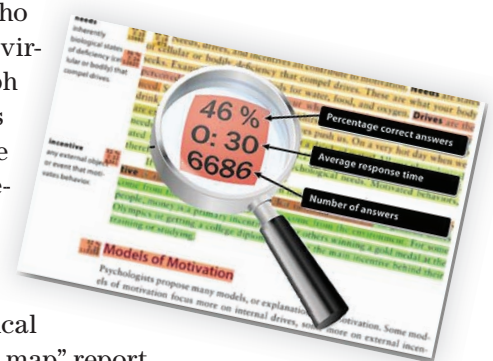


LEARNSMART®

BETTER DATA, SMARTER REVISION, IMPROVED RESULTS

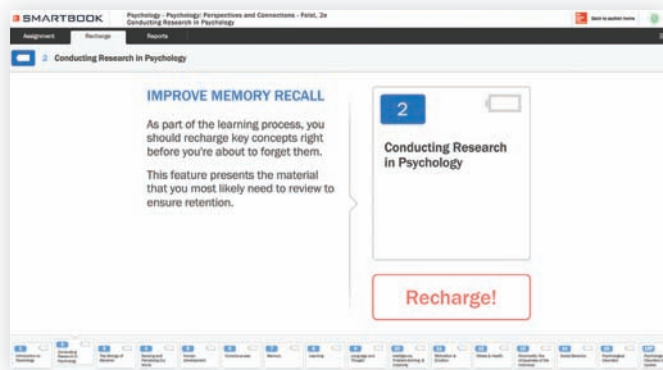
For this new edition, data were analyzed to identify the concepts students found to be the most difficult, allowing for expansion on the discussion, practice, and assessment of the challenging topics. The revision process for a new edition used to begin with gathering information from instructors about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

McGraw-Hill Education authors now have access to student performance data to analyze and to inform their revisions. These data are anonymously collected from the many students who use LearnSmart. Because virtually every text paragraph is tied to several questions that students answer while using LearnSmart, the specific concepts with which students are having the most difficulty are easily pinpointed through empirical data in the form of a “heat map” report.



You Think

SmartBook™ is the first and only adaptive reading experience designed to change the way students read and learn. It creates a personalized reading experience by highlighting the most impactful concepts a student needs to learn at that moment in time. As a student engages with SmartBook, the reading experience continuously adapts by highlighting content based on what the student knows and doesn't know. This ensures that the focus is on the content he or she needs to learn while simultaneously promoting long-term retention of material. Use SmartBook's real-time reports to quickly identify the concepts that require more attention from individual students—or the entire class. The end result? Students are more engaged with course content, can better prioritize their time, and come to class ready to participate.



MOVING BEYOND BLACK-AND-WHITE THINKING

Psychology: Perspectives and Connections pays careful attention to multiple causality, moving students beyond “black-and-white” or “either/or” thinking.

Connection

The prefrontal cortex plays a key role in working memory by evaluating sensory information and designing it for storage or disposal.

See “Pathways of Short-Term Memory in the Hippocampus and Prefrontal Cortex,” Chapter 7, “Memory,” p. 271.

Connections annotations appear throughout the text, reinforcing the inter-relatedness of subfields of psychology. In Chapter 8, for example, we explore the relationship among mirror neurons, learning, and socio-emotional development.

Coverage of psychological disorders, such as categories and definitions, has been updated to reflect the publication of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. Along with the updates are discussions surrounding the changes in categories, the impact on diagnoses and treatments, and the role of biology.

FOSTERING EXPERIENTIAL LEARNING

connect ^{McGraw Hill Education} **PSYCHOLOGY** **Connect Psychology** includes assignable and assessable videos, quizzes, exercises, and interactivities, all associated with learning objectives for *Psychology: Perspectives and Connections*, third edition. Videos, interactive assessments, and simulations invite engagement and add real-world perspective to the introductory psychology course. With Connect Psychology, students can study whenever and wherever they choose.

PSYCHOLOGY IN EVERYDAY LIFE

By connecting psychology to students' own lives, concepts become more relevant and understandable.

Powered by McGraw-Hill's Connect, **Newsflash** exercises tie current news stories to key psychological principles and learning objectives. After interacting with a contemporary news story, students are assessed on their ability to make the connection between real life and research findings. Many cases are revisited across chapters, encouraging students to consider multiple perspectives. In Chapter 3, students visit the case of Congresswoman Gabrielle Giffords, who suffered a brain injury in a 2011 shooting. The case is revisited in Chapter 9, “Language and Thought.”

Concept Clips, designed to help students comprehend some of the most difficult concepts in introductory psychology, include colorful graphics and stimulating animations to break down core concepts in a step-by-step manner, to engage students, and to increase their retention. Powered by Connect Psychology, Concept Clips can be used as both a lively presentation tool for the classroom and student assessment.


TESTING ASSUMPTIONS THROUGH THE RESEARCH PROCESS

Overcoming preconceptions through an understanding of the research process is often one of the biggest challenges students face in Introductory Psychology. **Research Process**, appearing in Chapters 2 through 16, demystifies research by providing a step-by-step, visual approach to the scientific method. Students are presented with the basic structure of a contemporary study, walking through the “story” of how the research was conducted. In Chapter 3, for example, students are led through the methodology chosen by a researcher exploring whether different parts of the brain are responsible for imagining and seeing faces versus only imagining.

Research Process

1 Research Question
Are there differences between men and women in their interest in casual sex? The researchers hypothesized that men are more eager for casual sex than are women.

2 Method
Clark and Hatfield (1989) developed a brief survey to address the research question. Research assistants who were college students approached students of the opposite sex. After a brief introduction, the research assistant would ask each student one of these questions: “Would you go out with me tonight?” “Would you come over to my apartment tonight?” or “Would you go to bed with me tonight?”



3 Results
This table gives responses to the various questions, by gender.

Question	Men	Women
“Would you go out with me tonight?”	50%	50%
“Would you come over to my apartment tonight?”	67%	0%
“Would you go to bed with me tonight?”	73%	0%

4 Conclusion
Men and women were equally likely to agree to go on a date with someone they didn't really know. As the proposal became increasingly intimate, however, women backed off. Consistent with the hypothesis, men were much more likely than women to agree to have sex. This finding would be predicted by general investment theory, which states that the cost of having sex is quite different for men and women.

CHAPTER-BY-CHAPTER CHANGES

Psychology: Perspectives and Connections includes over 2,300 research citations, with one-quarter of them coming from 2012 or later.

But research is only part of the story. *Psychology: Perspectives and Connections* also reflects substantial chapter-by-chapter contents and begins with “Challenge Your Assumptions” questions.

Chapter 1: Introduction to Psychology

- new chapter-opening vignette on the effects of technology
- new material on applying the field of psychology to real life
- new material on how introductory psychology can change your life
- updated material on studying electronic social interactions
- updated material on industrial/organizational psychology

Chapter 2: Conducting Research in Psychology

- expanded and reorganized coverage of descriptive statistics and inferential statistics
- new coverage of IQ and normal distribution
- new material that applies the notion “Don’t believe everything you think” to student lives
- new meaningful graphic on independent and dependent variables

Chapter 3: The Biology of Behavior

- expanded coverage of brain-computer and brain-machine interfaces, including new material on robotics
- new coverage of gray matter and white matter
- new coverage of diffusion tensor imaging
- new coverage of genes, environment, and family
- new coverage of transcranial direct current and magnetic stimulation
- new coverage of “softwiring”—for example, human brains are softwired and predisposed to certain traits
- expanded coverage of epigenetics

Chapter 4: Sensing and Perceiving Our World

- new coverage of synesthesia
- new research on how physical and emotional pain are processed the same way in the brain
- new material on the association between pain threshold and depression
- new material on color vision in humans and other animals

Chapter 5: Human Development

- new opening vignette on the power of the environment to shape genetic influence in twins
- expanded coverage on how musical training shapes brain development over the life span and its association with intelligence

- new material on distracted driving in teens
- new research on neural pruning during brain development
- expanded coverage of middle adulthood
- updated coverage of digital technology's impact across every stage of human development
- expanded coverage of the positive benefits of regular exercise on learning and memory in teens, adults, and the elderly
- new coverage of the development of dementias, especially Alzheimer's disease

Chapter 6: Consciousness

- reorganized coverage of hypnosis
- expanded and updated section on the functions of sleep
- updated research on meditation and the brain
- new coverage of sleep deprivation and daily functioning
- new coverage of sleep and neural growth
- new material on nightmares
- expanded and updated coverage of multitasking
- new research on the therapeutic applications of certain psychedelic drugs

Chapter 7: Memory

- new coverage on how electrical and magnetic brain stimulation can enhance memory
- new research on how psychologists are developing methods to interfere with and even block painful memories
- new discussion of the extent to which drinks and over-the-counter drugs can enhance memory (and whether stimulants actually help memory formation)

Chapter 8: Learning

- new opening on how behavior is shaped by learning
- updated coverage of the Little Albert story
- updated coverage of how sleeping facilitates learning
- updated research throughout the chapter

Chapter 9: Language and Thought

- new chapter opening on language learning and thought
- new coverage of language and nature and nurture
- new coverage of hormones and thinking
- new coverage of the long-term effects of family environment on language learning
- updated research on the cognitive benefits of bilingualism
- updated and expanded coverage of nonrational decision making
- expanded coverage of the brain and language development

Chapter 10: Intelligence, Problem Solving, and Creativity

- new research on the genetic influence on intelligence
- expanded coverage of different forms of intelligence

- new coverage of intelligence and nature and nurture
- new coverage of brain activity and creativity
- new research on and discussion of whether intelligence is a necessary and sufficient condition for creative achievement
- new meaningful graphic on creativity and intelligence

Chapter 11: Motivation and Emotion

- new research on sleep and weight loss
- new discussion of an evolutionary revision to Maslow’s hierarchy of needs
- new research on gender differences in sexual behavior
- reorganized coverage of Ekman’s expression research
- new feature on the effects of Botox on facial expression and mood
- new coverage of flourishing, positive emotion, and well-being
- additional coverage of emotion and gender differences
- new meaningful graphic on needs and drives

Chapter 12: Stress and Health

- expanded coverage on how adverse experiences in childhood have lasting impacts on personality and health
- revised coverage of immune system
- new coverage of stressors
- new material on the role of “grit” (perseverance) and hardiness as qualities of successful people
- updated research on stress and cellular aging
- presentation of new models of “good stress” versus “bad stress” and coverage of the benefits of acute stress on health

Chapter 13: Personality: The Uniqueness of the Individual

- new material on assessing personality traits via social media, such as Facebook “likes”
- new discussion of how personality influences how we use social network sites
- revised coverage of personality and Alzheimer’s disease
- new coverage on the evolution of personality traits
- new coverage of cross-cultural findings in personality
- new meaningful graphic on how personality traits both change and remain stable over the life span

Chapter 14: Social Behavior

- updated coverage of cyberbullying and social acceptance/exclusion
- expanded discussion of critical analysis of the Zimbardo and Milgram studies
- updated coverage of media violence and aggression
- new discussion of applied research on cognitive dissonance
- major research updates throughout the chapter
- new research on the role of electronic social networks on lived experience

- new text on the benefits of kindness, altruism, and giving in the sections on prosocial behavior
- new text section, “Sexual Attraction and Mate Selection,” on electronic dating sites

Chapter 15: Psychological Disorders

- extensive revision incorporating all the new diagnoses of psychological disorders according to *Diagnostic and Statistical Manual-5 (DSM-5)*
- updated coverage of autism spectrum disorder
- new research process feature on gene-environment interaction in depression
- new coverage of the prevalence of psychological disorders
- new meaningful graphic on brain size and neglect

Chapter 16: Treatment of Psychological Disorders

- new coverage of electrical and magnetic brain stimulation and depression
- updated coverage of schizophrenia treatments
- new material on optogenetic therapy for chemical dependency and obsessive-compulsive disorder





connectINSIGHT™

Personalized Grading, On the Go, Made Easier. The first and only analytics tool of its kind, Connect Insight™ is a series of

visual data displays—each framed by an intuitive question—to provide at-a-glance information regarding how a class is doing: *How are my students doing? How is this student doing? How is this assignment doing? How are my assignments doing? How is my section doing?*

Instructors receive instant student performance matched with student activity, view real-time analytics so instructors can take action early and keep struggling students from falling behind, and are empowered with a more valuable and productive connection between themselves and their students with the transparency Connect Insight™ provides in the learning process.



create™

Easily rearrange chapters, combine material from other content sources, and quickly upload content you have written, such as your course syllabus or teaching

notes, using McGraw-Hill Create. Find the content you need by searching through thousands of leading McGraw-Hill textbooks. Arrange your book to fit your teaching style. Create even allows you to personalize your book's appearance by selecting the cover and adding your name, school, and course information. Order a Create book, and you will receive a complimentary print review copy in 3 to 5 business days or a complimentary electronic review copy via email in about an hour. Experience how McGraw-Hill empowers you to teach *your* students *your* way. <http://create.mheducation.com>



tegrity

Capture lessons and lectures in a searchable format for use in traditional, hybrid, “flipped classes,” and online courses by using Tegrity. Its personalized

learning features make study time efficient, and its affordability brings this benefit to every student on campus. Patented search technology and real-time Learning Management System (LMS) integrations make Tegrity the market-leading solution and service.



Campus
Simple
Seamless
Secure

McGraw-Hill Campus (www.mhcampus.com) provides faculty with true single sign-on access to all of McGraw-Hill's course content, digital tools, and other

high-quality learning resources from any LMS. This innovative offering allows for secure and deep integration, enabling seamless access for faculty and students to any of McGraw-Hill's course solutions, such as McGraw-Hill Connect® (all-digital teaching and learning platform), McGraw-Hill Create (state-of-the-art custom-publishing platform), McGraw-Hill LearnSmart (online adaptive study tool), and Tegrity (fully searchable lecture-capture service).

McGraw-Hill Campus includes access to McGraw-Hill's entire content library, including eBooks, assessment tools, presentation slides and multimedia content, among other resources, providing faculty open, unlimited access to prepare for class, create tests/quizzes, develop lecture material, integrate interactive content, and more.

REVIEWERS

William Adler, Collin County College
Jessica Alexander, Concord University
Clarissa Arms-Chavez, Auburn University at Montgomery
Irwin J. Badin, Montclair State University
Justin Bailey, Limestone College
Jane Bardal, Central New Mexico Community College
Dave Baskind, Delta College
Arlin James Benjamin Jr, University of Arkansas–Fort Smith
Richard Bernstein, Broward College
Jennifer E. Breneiser, Valdosta State University
Victor Broderick, Lincoln Land Community College
Elaine H. Cassel, Lord Fairfax Community College
Chrystal Christman-Hennel, University of Cincinnati
Wanda Clark, South Plains College
Abby Coats, Westminster College
Jill Cohen, Los Angeles Pierce College
Deborah Conway, Community College of Allegheny County
Kimberly Cummings, University of Tampa
Deanna DeGidio, Northern Virginia Community College
Meliksah Demir, Northern Arizona University
Katherine Demitrakis, Central New Mexico Community College
Susan Dutch, Westfield State University
Sam Ehrenreich, University of Texas at Dallas
Nolen Embry-Bailey, Bluegrass Community and Technical College
James Feger, Somerset Community College
Lisa M. Fosbender, Gulf Coast State College
Patricia S. Foster, Stephen F. Austin State University
Suzanne Gibson, Meridian Community College
Adam Goodie, University of Georgia
Jennifer Grewe, Utah State University
Mark Hauber, Hunter College
John Haworth, Chattanooga State Community College
Jeff Henriques, University of Wisconsin–Madison
Becky Hester, Western Carolina University
Michael Himle, University of Utah
Jameson Hirsch, East Tennessee State University
Lindsay Holland, Chattanooga State Community College
Jason Hortin, Olney Central College
Scott Husband, University of Tampa
Charles Jones, Wayne County Community College
Lance Jones, University of Toledo
Veronika Karpenko, University of Central Oklahoma
Don Kates, College of Dupage
Norman Kinney, Southeast Missouri State University
Michael Kitchens, Lebanon Valley College
Sandra Knode, Anne Arundel Community College
Erin Koterba, University of Tampa
Tyson Kreiger, Utica College
William J. Loftus, Big Sandy Community and Technical College
Cynthia Lonsbary, SUNY Jefferson Community College
Jeffrey Love, Penn State University
David Ludden, Lindsey Wilson College
Mark Mach, Dodge City Community College
Noah MacKenzie, University of Cincinnati, Clermont College
Tammy Mahan, College of the Canyons
Deborah Maher, Orange Coast College
Michael Mangan, University of New Hampshire
Donna B. Mantooth, Georgia Highlands College
Marion Mason, Bloomsburg University of Pennsylvania
Sean Meegan, University of Utah
Steven Mewaldt, Marshall University
Stephanie Moore, Northeast Mississippi Community College
Lisa Murphy, York County Community College
Margaret Nauta, Illinois State University
Arthur Olguin, Santa Barbara City College
Haley Orthel, Northern Arizona University
Tori Norris, Owensboro Community and Technical College
William Price, North Country Community College
Adam Privitera, Chemeketa Community College
Douglas L. Pruitt, Western Kentucky Community and Technical College
Meera Rastogi, University of Cincinnati, Clermont College
Heather Rice, Washington University in St. Louis
Mark Rittman, Cuyahoga Community College
Vicki Ritts, St. Louis Community College, Meramec
Alan Roberts, Indiana University
Ronnie Rothschild, Broward College
Jeffrey Rudski, Muhlenberg College
Michael Sauro, Adirondack Community College
Peggy Skinner, South Plains College
Randyl Smith, Metropolitan State University of Denver
Lynn Sprott, SUNY Jefferson Community College
Barry Stennett, University of North Georgia
Rachelle Tannenbaum, Anne Arundel Community College
Lara Tedrow, Tidewater Community College
Eloise Thomas, Ozarks Technical Community College
Jeremy Tost, Valdosta State University
Terry Trepper, Purdue University Calumet
Tommy Turner, Snead State Community College
Denise Wallace, Wayne County Community College
Emily Wickelgren, California State University, Sacramento
Thomas Williams, Bowling Green Technical College
Ralph Worthing, Delta College
Dawn Wright, Meridian Community College
John W. Wright, Washington State University
Jennifer Yanowitz, Utica College

Acknowledgments

Writing *Psychology: Perspectives and Connections* has been an enormous undertaking of hard work and love. We have felt privileged by the opportunity to delve into the literature of so many areas of psychology in depth, something for which career academics rarely have time. We have also been fortunate to have had the commitment of a vast team of collaborators, to whom we offer our profound gratitude. We thank the wonderful professionals at McGraw-Hill who have had utter confidence in this project from day one: Krista Bettino, our executive director, jump-started our new vision for the second edition and shepherded it through the intense revision schedule. Betty Chen, as our product developer, has been invaluable in helping shape new and crisper language and updating concepts. We also want to acknowledge the developmental editor on the first edition, Judith Kromm, who acted as a third author in crafting text, interpreting reviews, and helping us learn that strong substance can co-exist with simple and clear writing. Sheryl Adams, as executive market development manager, always has her finger on the pulse of the people for whom we wrote the book—instructors and students. As midcareer authors, we sometimes forget how 19- and 20-year-old students think and will respond to the information we are presenting. Sheryl always kept us in line in this regard. Dawn Groundwater, as lead product developer, was instrumental in keeping the project on task and developing new ideas for how to best package the unique qualities of the book. Nancy Welcher, the brand manager at McGraw-Hill, has been a tremendous help. We would like to thank Sarah Colwell, digital development editor, who was instrumental in developing Newsflash and Concept Clip. Finally, although no longer with McGraw-Hill, we want to still acknowledge Mike Sugarman, our original publisher, who was a man of vision and always said the right things when we needed encouragement and support the most on earlier editions.

Our thanks also go to the Editing, Design, and Production team: Sandy Wille, who guided us through the copyediting and composition stages of production; designers Trevor Goodman and Preston Thomas; and Content Licensing Specialists John Leland and Shirley Lanners. We also must thank copyeditor Deb DeBord, 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 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. 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 Jess and Mary Jo Feist—for their love and unending support throughout the writing of the first edition. Mary

Jo, unfortunately, passed away in September 2009 and was not around to see the second and third 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. Although they sometimes lost us both for weekends or evenings, they also came to appreciate the positives of this project, like getting to attend sales meetings in New Orleans, team meetings in New York, and a national teaching of psychology conference at a beach resort in Florida.

Erika would also like to extend a very heartfelt “THANKS!” to our local café, Bica Coffeehouse, for their superb coffees and the lovely space that served as her office during her writing of the third edition.

We are in an unusual situation for ending this acknowledgments section. Often, authors end by thanking their spouses or partners. In this case, spouse also means co-author. More than one person we have told about this project has said, “Wow! And you’re still married?” Projects as big, complex, and difficult as this one test the mettle of any relationship. By affording us the opportunity to work creatively together, this project has challenged and strengthened the bond between us. We learned how to play to each other’s strengths, balance viewpoints and expertise, and compromise. We were able to work through things late at night, even when one of us did not feel like it. We wonder how other coauthors of introductory psychology textbooks manage to work out the complex problems that arise while writing something this big without such convenience and intimacy as our relationship provides. We are grateful for each other.

PSYCHOLOGY

Perspectives and Connections

1 Introduction to Psychology

Chapter Outline

What Is Psychology?

Subdisciplines of Psychology

The Origins of Psychology

Ways of Thinking about Mind, Body, and Experience

No One Perspective Tells the Whole Story in Psychology

Chapter Review

Challenge Your Assumptions

True or False?

- Psychology is all about curing mental illness. (see page 6)
- 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 26)





In the spring of 2011 revolution spread throughout Egypt. After decades of violent oppression and despotic rule, everyday Egyptians wanted change. Revolutions have existed as long as rulers and governments have, but something new accelerated the spread of these uprisings: social networking sites. Organized protests were planned and carried out over Twitter, Facebook, and YouTube. Eighteen days after the revolution started, it successfully and relatively bloodlessly disposed of the government.

In another instance of online social interaction, Tonya was skeptical of online dating. She had already been married, had a 12-year-old daughter, and was not finding anyone to date (Schipani, 2014). Her parents offered to buy her a subscription to an online dating service and at first she resisted. Within a few weeks she was matched with Frank, who had had no luck after a year of online dating. After exchanging emails for some time, Tonya and Frank finally went on their first date and immediately hit it off: Their date lasted 9 hours, and they talked about everything from children to religion. Tonya now says, “There really is someone out there who is so good for me—so smart, funny. He’s never let me down. We’re just so stinkin’ happy” (Schipani, 2014). They soon got married and now are expecting their first child.

These two events 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). 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). People use “friending” on social networks to widen their social circles, which can translate into real-life social benefits (P. G. 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). 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

psychology
The scientific study of thought and behavior.

Challenge Your Assumptions

True or False? Psychology is all about curing mental illness.

False: Psychologists not only diagnose and treat mental illness but also test hypotheses using the scientific method. Psychology is both a practice and a science.

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 *folk* or *pop psychology*—are the methods used in each. As you will see in Chapter 2, “Conducting Research in Psychology,” and again in Chapter 16, “Treatment of Psychological Disorders,” the methods of scientific and clinical psychologists are quite different from those of lay folk, who sometimes draw from an unreliable body of knowledge known as *common sense*.

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 advisor 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 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 on p. 7.

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. They did, after all, form relationships, have children, and protect



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 Chapter 13], 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 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?

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 1.1: 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 1.1 gives a breakdown of the percentages of doctorates awarded in 2008 in each of the major subdisciplines we discuss.

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 bodily systems and chemicals and their relationship to behavior and thought. An example of research in biological psychology

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 thought and behavior.

appears in Chapter 12, where we discuss the effects of stress on hormones and behavior. Neuroscience and biological psychology overlap substantially. The latter 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.



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

Some clinical psychologists also conduct research and teach. Clinical psychologists work in universities, medical settings, or private practice. As you can see from Figure 1.1, 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

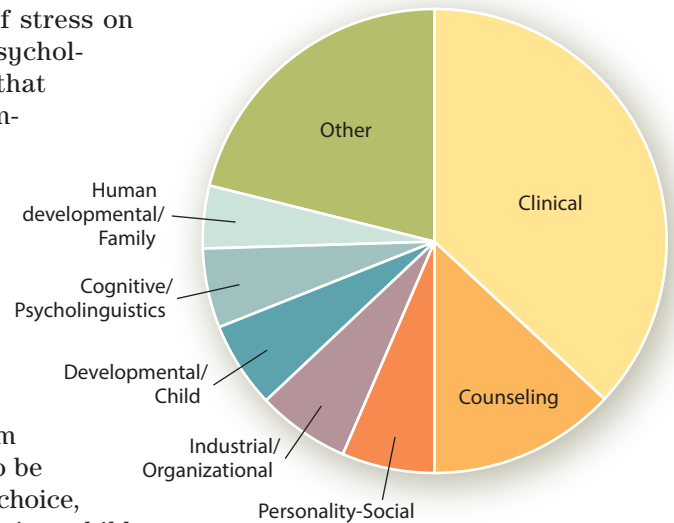


FIGURE 1.1
PERCENTAGE OF PhDs AWARDED IN THE SUBFIELDS OF PSYCHOLOGY IN 2008. (Adapted from Mulvey & Grus, 2010)

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.

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.