



Experience
PSYCHOLOGY

THIRD EDITION

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LAURA A. KING

experience psychology

Third Edition

Laura A. King

University of Missouri, Columbia





EXPERIENCE PSYCHOLOGY, THIRD EDITION

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Laura A. King

Laura King did her undergraduate work at Kenyon College, where she began studying toward an English major. In the second semester of her junior year, she declared a second major in psychology. She completed her A.B. in English with high honors and distinction and in psychology with distinction in 1986. Laura then did graduate work at Michigan State University and the University of California, Davis, receiving her Ph.D. in personality psychology in 1991.

Laura began her career at Southern Methodist University in Dallas, moving to the University of Missouri in 2001, where she is now a Curators' Professor of Psychology. In addition to seminars in the development of character, social psychology, and personality psychology, she has taught undergraduate lecture courses in introductory psychology, introduction to personality psychology, and social psychology. She has also taught the Psychology of the Good Life for the community at large. At SMU, she received six different teaching awards, including the "M" award for "sustained excellence" in 1999. At the University of Missouri, she received the Chancellor's Award for Outstanding Research and Creative Activity in 2004.

Her research, which has been funded by the National Institute of Mental Health and the National Science Foundation, has focused on a variety of topics relevant to the question of what it is that makes for a good life. She has studied goals, life stories, happiness, well-being, and meaning in life. In general, her work reflects an enduring interest in understanding what is good and healthy in people. In 2001, her research accomplishments were recognized with a Templeton Prize in Positive Psychology. In 2011, she received the Ed and Carol Diener Award for Distinguished Contributions to Personality Psychology. Laura's research (often in collaboration with undergraduate and graduate students) has appeared in many outstanding publications, including *American Psychologist*, *Journal of Personality and Social Psychology*, *Personality and Social Psychology Bulletin*, and *Psychological Science*.

Laura has served as editor of the *Journal of Personality and Social Psychology: Personality and Individual Differences* and the *Journal of Research in Personality*. She has also served as associate editor of *Personality and Social Psychology Bulletin*, the *Journal of Personality and Social Psychology*, and *Social and Personality Psychology Compass*, as well as on numerous grant panels. She has edited or coedited special sections of the *Journal of Personality* and *American Psychologist*.

In "real life," Laura is an accomplished cook and enjoys listening to music (mostly jazz vocalists and singer-songwriters), running with her faithful dog Bill, and swimming and roller-skating with her son Sam.


about the
author

For Sam

brief contents

| | | |
|------------|--------------------------------------|-----|
| CHAPTER 1 | The Science of Psychology | 1 |
| CHAPTER 2 | The Brain and Behavior | 41 |
| CHAPTER 3 | Sensation and Perception | 84 |
| CHAPTER 4 | States of Consciousness | 125 |
| CHAPTER 5 | Learning | 166 |
| CHAPTER 6 | Memory | 201 |
| CHAPTER 7 | Thinking, Intelligence, and Language | 241 |
| CHAPTER 8 | Human Development | 278 |
| CHAPTER 9 | Motivation and Emotion | 325 |
| CHAPTER 10 | Personality | 362 |
| CHAPTER 11 | Social Psychology | 399 |
| CHAPTER 12 | Psychological Disorders | 436 |
| CHAPTER 13 | Therapies | 477 |
| CHAPTER 14 | Health Psychology | 507 |

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| | |
|---------------|------|
| Glossary | G-1 |
| References | R-1 |
| Name Index | NI-1 |
| Subject Index | SI-1 |

contents

PREFACE xii

1

The Science of Psychology 1

- 1 Defining Psychology and Exploring Its Roots 2**
 - The Psychological Frame of Mind 3
 - Psychology as the Science of All Human Behavior 4
 - Psychology in Historical Perspective 6
- 2 Contemporary Approaches to Psychology 8**
 - The Biological Approach 8
 - The Behavioral Approach 9
 - The Psychodynamic Approach 9
 - The Humanistic Approach 10
 - The Cognitive Approach 10
 - The Evolutionary Approach 10
 - The Sociocultural Approach 11
 - Summing up the Seven Contemporary Approaches 11
- 3 Psychology's Scientific Method 13**
- 4 Types of Psychological Research 17**
 - Descriptive Research 17
 - Correlational Research 20
 - Experimental Research 23
 - INTERSECTION:** Personality Psychology and Social Psychology: Does Being with Others Lead to Happiness or Is It the Other Way Around? 26
 - Applications of the Three Types of Research 28
- 5 Research Samples and Settings 29**
 - The Research Sample 29
 - The Research Setting 30
 - PSYCHOLOGY IN OUR WORLD:** The Global Science of Happiness 31
- 6 Conducting Ethical Research 33**
 - Ethics Guidelines 33
 - CHALLENGE YOUR THINKING:** Is It Ethical to Use Deception in Research? 34
 - The Ethics of Research with Animals 35
 - The Place of Values in Psychological Research 36
- 7 Learning About Psychology Means Learning About You 37**
 - Encountering Psychology in Everyday Life 37
 - Appreciating Psychology as the Science of You 38
- SUMMARY 40
- KEY TERMS 40
- ANSWERS TO SELF-QUIZZES 40

2

The Brain and Behavior 41

- 1 The Nervous System 42**
 - Characteristics of the Nervous System 42
 - Pathways in the Nervous System 43
 - Divisions of the Nervous System 44
- 2 Neurons 46**
 - Specialized Cell Structure 46
 - CHALLENGE YOUR THINKING:** Do Mirror Neurons Hold the Key to Social Understanding? 47
 - The Neural Impulse 49
 - Synapses and Neurotransmitters 50
 - Neural Networks 54
- 3 Structures of the Brain and Their Functions 55**
 - How Researchers Study the Brain and Nervous System 55
 - How the Brain Is Organized 58
 - The Cerebral Cortex 62
 - INTERSECTION:** Neuroscience and Emotion: How Does the Brain Recognize What Is Funny? 65
 - The Cerebral Hemispheres and Split-Brain Research 67
 - Integration of Function in the Brain 70
- 4 The Endocrine System 71**
- 5 Brain Damage, Plasticity, and Repair 73**
 - The Brain's Plasticity and Capacity for Repair 73
 - PSYCHOLOGY IN OUR WORLD:** Protecting the Athlete's Brain 74
 - Brain Tissue Implants 75
- 6 Genetics and Behavior 76**
 - Chromosomes, Genes, and DNA 76
 - The Study of Genetics 77
 - Genes and the Environment 80
- SUMMARY 82
- KEY TERMS 83
- ANSWERS TO SELF-QUIZZES 83

3 Sensation and Perception 84

- 1 How We Sense and Perceive the World 85**
 - The Processes and Purposes of Sensation and Perception 85
 - Sensory Receptors and the Brain 87
 - CHALLENGE YOUR THINKING:** Can We Feel the Future? 90
 - Thresholds 91
 - Perceiving Sensory Stimuli 93
 - Sensory Adaptation 95
- 2 The Visual System 96**
 - The Visual Stimulus and the Eye 96
 - Visual Processing in the Brain 101
 - Color Vision 102
 - Perceiving Shape, Depth, Motion, and Constancy 104
- 3 The Auditory System 110**
 - The Nature of Sound and How We Experience It 110
 - Structures and Functions of the Ear 110
 - Theories of Hearing 112
 - Auditory Processing in the Brain 114
 - Localizing Sound 114
- 4 Other Senses 115**
 - The Skin Senses 116
 - The Chemical Senses 118
 - PSYCHOLOGY IN OUR WORLD:** Why Salt Is the Salt of the Earth 119
 - INTERSECTION:** Emotion and Sensation: What Do Feelings Smell Like? 121
 - The Kinesthetic and Vestibular Senses 121

SUMMARY 123
KEY TERMS 124
ANSWERS TO SELF-QUIZZES 124

4 States of Consciousness 125

- 1 The Nature of Consciousness 126**
 - Defining Consciousness 127
 - Consciousness and the Brain 127
 - Theory of Mind 128
 - Levels of Awareness 128
 - CHALLENGE YOUR THINKING:** On Second Thought, Is Conscious Reflection Required for Moral Behavior? 130
- 2 Sleep and Dreams 133**
 - Biological Rhythms and Sleep 133
 - Why Do We Need Sleep? 134
 - Stages of Wakefulness and Sleep 136
 - Sleep Throughout the Life Span 139
 - Sleep and Disease 140

Sleep Disorders 141
Dreams 143

- 3 Psychoactive Drugs 146**
 - Uses of Psychoactive Drugs 146
 - Types of Psychoactive Drugs 147

- 4 Hypnosis 157**
 - The Nature of Hypnosis 157
 - Explaining Hypnosis 158
 - Uses of Hypnosis 159
- 5 Meditation 160**
 - Mindfulness Meditation 160
 - Lovingkindness Meditation 161
 - INTERSECTION:** Consciousness and Social Psychology: Can Lovingkindness Meditation Reduce Prejudice? 162
 - The Meditative State of Mind 162
 - PSYCHOLOGY IN OUR WORLD:** Meditation at Work 163
 - Getting Started with Meditation 163

SUMMARY 164
KEY TERMS 165
ANSWERS TO SELF-QUIZZES 165

5 Learning 166

- 1 Types of Learning 167**
- 2 Classical Conditioning 169**
 - Pavlov's Studies 169
 - Classical Conditioning in Humans 173
 - PSYCHOLOGY IN OUR WORLD:** Marketing Between the Lines 176
 - INTERSECTION:** Learning and Social Psychology: Can Classical Conditioning Help Us Understand the Meaning of Life? 177
- 3 Operant Conditioning 178**
 - Defining Operant Conditioning 178
 - Thorndike's Law of Effect 179
 - Skinner's Approach to Operant Conditioning 180
 - Shaping 180
 - Principles of Reinforcement 181
 - Applied Behavior Analysis 188
- 4 Observational Learning 189**
- 5 Cognitive Factors in Learning 191**
 - Purposive Behavior 191
 - Insight Learning 192
- 6 Biological, Cultural, and Psychological Factors in Learning 194**
 - Biological Constraints 194
 - Cultural Influences 196
 - Psychological Constraints 196
 - CHALLENGE YOUR THINKING:** Do Learning Styles Matter to Learning? 197

SUMMARY 199
KEY TERMS 200
ANSWERS TO SELF-QUIZZES 200

6 Memory 201

- 1 **The Nature of Memory** 202
 - 2 **Memory Encoding** 203
 - Attention 203
 - Levels of Processing 204
 - Elaboration 204
 - Imagery 205
 - 3 **Memory Storage** 207
 - Sensory Memory 207
 - Short-Term Memory 208
 - Long-Term Memory 211
 - 4 **Memory Retrieval** 219
 - Serial Position Effect 219
 - Retrieval Cues and the Retrieval Task 220
 - Special Cases of Retrieval 222
 - CHALLENGE YOUR THINKING:** Can Children Be Reliable Eyewitnesses to Their Own Abuse? 226
 - PSYCHOLOGY IN OUR WORLD:** Using Psychological Research to Improve Police Lineups 228
 - 5 **Forgetting** 229
 - Encoding Failure 230
 - Retrieval Failure 230
 - INTERSECTION:** Cognitive Psychology and Social Psychology: If We Can Forgive, Does That Help Us Forget? 233
 - 6 **Tips from the Science of Memory—for Studying and for Life** 234
 - Organizing, Encoding, Rehearsing, and Retrieving Course Content 235
 - Autobiographical Memory and the Life Story 236
 - Keeping Memory Sharp 237
- SUMMARY 238
KEY TERMS 240
ANSWERS TO SELF-QUIZZES 240

7 Thinking, Intelligence, and Language 241

- 1 **The Cognitive Revolution in Psychology** 242
- 2 **Thinking** 244
 - Concepts 245
 - Problem Solving 245
 - Reasoning and Decision Making 248
 - Thinking Critically and Creatively 252
 - PSYCHOLOGY IN OUR WORLD:** Help Wanted: Critical and Creative Thinkers 253

CHALLENGE YOUR THINKING: Is There a Link Between Creative Genius and Psychopathology? 255

- 3 **Intelligence** 256
 - Measuring Intelligence 257
 - Genetic and Environmental Influences on Intelligence 260
 - Extremes of Intelligence 262
 - INTERSECTION:** Educational Psychology and Social Psychology: Do Teachers Have Stereotypes About Gifted Children? 264
 - Theories of Multiple Intelligences 266
 - 4 **Language** 268
 - The Basic Properties of Language 268
 - Language and Cognition 269
 - Biological and Environmental Influences on Language 271
 - Language Development over the Life Span 273
- SUMMARY 276
KEY TERMS 277
ANSWERS TO SELF-QUIZZES 277

8 Human Development 278

- 1 **Exploring Human Development** 279
 - Research Methods in Developmental Psychology 279
 - How Do Nature and Nurture Influence Development? 280
 - Do Early Experiences Rule Us for Life? 280
 - Nature, Nurture, and You 281
 - Three Domains of Development 282
- 2 **Physical Development** 283
 - Prenatal Physical Development 283
 - Physical Development in Infancy and Childhood 285
 - Physical Development in Adolescence 288
 - Physical Development in Adulthood 290
- 3 **Cognitive Development** 294
 - Cognitive Development from Childhood into Adulthood 294
 - PSYCHOLOGY IN OUR WORLD:** The Joy of the Toy 299
 - Cognitive Processes in Adulthood 300
- 4 **Socioemotional Development** 302
 - Socioemotional Development in Infancy 302
 - INTERSECTION:** Developmental and Social Psychology: Is Attachment an Enduring Aspect of Life? 304
 - Erikson's Theory of Socioemotional Development 305
 - CHALLENGE YOUR THINKING:** Is Parenthood Associated with Happiness? 312
- 5 **Gender Development** 314
 - Biology and Gender Development 314
 - Cognitive Aspects of Gender Development 315
 - Socioemotional Experience and Gender Development 315
 - Nature and Nurture Revisited: The John/Joan Case 316

| | |
|---|------------|
| 6 Moral Development | 317 |
| Kohlberg's Theory | 317 |
| Critics of Kohlberg | 318 |
| Moral Development in a Socioemotional Context | 318 |
| 7 Death, Dying, and Grieving | 319 |
| Terror Management Theory: A Cultural Shield Against Mortality | 320 |
| Kübler-Ross's Stages of Dying | 320 |
| Bonanno's Theory of Grieving | 321 |
| Carving Meaning Out of the Reality of Death | 321 |
| 8 Active Development as a Lifelong Process | 322 |
| SUMMARY | 323 |
| KEY TERMS | 324 |
| ANSWERS TO SELF-QUIZZES | 324 |

9 Motivation and Emotion 325

| | |
|--|------------|
| 1 Theories of Motivation | 326 |
| The Evolutionary Approach | 326 |
| Drive Reduction Theory | 326 |
| Optimum Arousal Theory | 327 |
| 2 Hunger and Sex | 328 |
| The Biology of Hunger | 328 |
| Obesity | 330 |
| The Biology of Sex | 332 |
| Cognitive and Sensory/Perceptual Factors in Sexuality | 333 |
| Cultural Factors in Sexuality | 334 |
| Sexual Behavior and Orientation | 335 |
| 3 Beyond Hunger and Sex: Motivation in Everyday Life | 340 |
| Maslow's Hierarchy of Human Needs | 340 |
| Self-Determination Theory | 341 |
| CHALLENGE YOUR THINKING: What Motivates Suicide Bombers? | 342 |
| Intrinsic Versus Extrinsic Motivation | 344 |
| Self-Regulation: The Successful Pursuit of Goals | 344 |
| INTERSECTION: Motivation and Behavior Genetics: Why Do We Procrastinate? | 346 |
| 4 Emotion | 347 |
| Biological Factors in Emotion | 347 |
| Cognitive Factors in Emotion | 350 |
| Behavioral Factors in Emotion | 352 |
| Sociocultural Factors in Emotion | 353 |
| PSYCHOLOGY IN OUR WORLD: Expressing Ourselves Online: The Psychology of Emoticons | 355 |
| Classifying Emotions | 355 |
| Adaptive Functions of Emotions | 356 |

| | |
|---|------------|
| 5 Motivation and Emotion: The Pursuit of Happiness | 358 |
| Biological Factors in Happiness | 358 |
| Obstacles in the Pursuit of Happiness | 358 |
| Happiness Activities and Goal Striving | 359 |
| SUMMARY | 360 |
| KEY TERMS | 361 |
| ANSWERS TO SELF-QUIZZES | 361 |

10 Personality 362

| | |
|---|------------|
| 1 Psychodynamic Perspectives | 363 |
| Freud's Psychoanalytic Theory | 363 |
| PSYCHOLOGY IN OUR WORLD: Defense Mechanisms and the Psychology of Hypocrisy | 366 |
| Psychodynamic Critics and Revisionists | 368 |
| Evaluating the Psychodynamic Perspectives | 370 |
| 2 Humanistic Perspectives | 371 |
| Maslow's Approach | 371 |
| Rogers's Approach | 372 |
| Evaluating the Humanistic Perspectives | 373 |
| 3 Trait Perspectives | 374 |
| Trait Theories | 374 |
| The Five-Factor Model of Personality | 375 |
| CHALLENGE YOUR THINKING: Is There One Really Great Personality? | 378 |
| Evaluating the Trait Perspectives | 380 |
| 4 Personological and Life Story Perspectives | 381 |
| Murray's Personological Approach | 381 |
| The Life Story Approach to Identity | 382 |
| Evaluating the Life Story Approach and Similar Perspectives | 383 |
| 5 Social Cognitive Perspectives | 383 |
| Bandura's Social Cognitive Theory | 384 |
| Mischel's Contributions | 385 |
| Evaluating the Social Cognitive Perspectives | 387 |
| 6 Biological Perspectives | 388 |
| Personality and the Brain | 388 |
| Personality and Behavioral Genetics | 391 |
| Evaluating the Biological Perspectives | 391 |
| 7 Personality Assessment | 392 |
| Self-Report Tests | 392 |
| INTERSECTION: Personality and Neuroscience: How Do the Brain's Hemispheres Complete a Questionnaire? | 394 |
| Projective Tests | 395 |
| Other Assessment Methods | 396 |
| SUMMARY | 397 |
| KEY TERMS | 398 |
| ANSWERS TO SELF-QUIZZES | 398 |

11

Social Psychology 399

- 1 Defining Social Psychology 400**
Features of Social Psychology 400
 - 2 Social Cognition 402**
Person Perception 402
Attribution 404
The Self as a Social Object and Social Comparison 406
Attitudes 406
Persuasion 408
PSYCHOLOGY IN OUR WORLD: Making the Sale! 409
 - 3 Social Behavior 410**
Altruism 410
Aggression 413
 - 4 Close Relationships 417**
Attraction 417
Love 418
Models of Close Relationships 419
 - 5 Social Influence and Group Processes 420**
Conformity and Obedience 420
INTERSECTION: Social Psychology and Cross-Cultural Psychology: Why Are Some Nations More Conforming Than Others? 422
Group Influence 425
Social Identity 427
Prejudice 429
CHALLENGE YOUR THINKING: Why Does a Cell Phone Look Like a Gun? 431
Improving Intergroup Relations 432
- SUMMARY 434
KEY TERMS 435
ANSWERS TO SELF-QUIZZES 435

12

Psychological Disorders 436

- 1 Defining and Explaining Abnormal Behavior 437**
Three Criteria of Abnormal Behavior 437
Culture, Context, and the Meaning of Abnormal Behavior 438
Theoretical Approaches to Psychological Disorders 438
Classifying Abnormal Behavior 440
CHALLENGE YOUR THINKING: Does Everyone Have ADHD? 442
- 2 Anxiety and Anxiety-Related Disorders 443**
Generalized Anxiety Disorder 443
Panic Disorder 444
Specific Phobia 445

- Social Anxiety Disorder 446
Obsessive-Compulsive Disorder 447
OCD-Related Disorders 447
Post-Traumatic Stress Disorder 448
PSYCHOLOGY IN OUR WORLD: The Psychological Wounds of War 449

- 3 Disorders Involving Emotion and Mood 450**
Depressive Disorders 450
Bipolar Disorder 453
 - 4 Eating Disorders 454**
Anorexia Nervosa 454
Bulimia Nervosa 455
INTERSECTION: Clinical Psychology and Emotion: Does Positive Emotion Play a Role in Anorexia Nervosa? 456
Anorexia Nervosa and Bulimia Nervosa: Causes and Treatments 456
Binge-Eating Disorder 457
Binge-Eating Disorder: Causes and Treatments 457
 - 5 Dissociative Disorders 458**
Dissociative Amnesia 459
Dissociative Identity Disorder 459
 - 6 Schizophrenia 461**
Symptoms of Schizophrenia 462
Causes of Schizophrenia 463
 - 7 Personality Disorders 466**
Antisocial Personality Disorder 466
Borderline Personality Disorder 468
 - 8 Suicide 469**
 - 9 Combatting Stigma 472**
Consequences of Stigma 472
Overcoming Stigma 474
- SUMMARY 474
KEY TERMS 476
ANSWERS TO SELF-QUIZZES 476

13

Therapies 477

- 1 Approaches to Treating Psychological Disorders 478**
The Psychological Approach to Therapy 478
The Biological Approach to Therapy 478
The Sociocultural Approach to Therapy 480
- 2 Psychotherapy 481**
Central Issues in Psychotherapy 481
Psychodynamic Therapies 483
Humanistic Therapies 485
Behavior Therapies 486
Cognitive Therapies 488
PSYCHOLOGY IN OUR WORLD: Seeking Therapy? There Is Probably an App for That 491
Therapy Integrations 491

3 Biological Therapies 492
 Drug Therapy 493
CHALLENGE YOUR THINKING: Are Antidepressants Better Than Placebos? 495
 Antipsychotic Drugs 496
 Electroconvulsive Therapy 496
 Psychosurgery 498

4 Sociocultural Approaches and Issues in Treatment 499
 Group Therapy 499
 Family and Couples Therapy 500
 Self-Help Support Groups 501
 Community Mental Health 502
 Cultural Perspectives 502
INTERSECTION: Clinical and Cultural Psychology: How Can Cognitive-Behavior Therapy Work Across Different Belief Systems? 503

SUMMARY 505
 KEY TERMS 506
 ANSWERS TO SELF-QUIZZES 506

14 Health Psychology 507

1 Health Psychology and Behavioral Medicine 508
 The Biopsychosocial Model 508
 Connections Between Mind and Body 509

2 Making Positive Life Changes 510
 Theoretical Models of Change 510
 The Stages of Change Model 510

3 Resources for Effective Life Change 514
 Motivation 514
 Social Relationships 515
 Religious Faith 516
 Personality Characteristics 517
CHALLENGE YOUR THINKING: How Powerful Is the Power of Positive Thinking? 519

4 Toward a Healthier Mind (and Body): Controlling Stress 520
 Stress and Its Stages 520
 Stress and the Immune System 521
 Stress and Cardiovascular Disease 522
 Stress and Cancer 523
 Cognitive Appraisal and Coping with Stress 524
 Strategies for Successful Coping 525
 Stress Management Programs 526

5 Toward a Healthier Body (and Mind): Behaving as If Your Life Depends upon It 527
 Becoming Physically Active 527
 Eating Right 529
PSYCHOLOGY IN OUR WORLD: Environments That Support Active Lifestyles 530
INTERSECTION: Health Psychology and Cognition: Can Mindless Processing Enhance Healthy Eating? 532
 Quitting Smoking 532
 Practicing Safe Sex 533

6 Psychology and Your Good Life 534

SUMMARY 535
 KEY TERMS 536
 ANSWERS TO SELF-QUIZZES 536

 HUMAN DEVELOPMENT (CHRONOLOGICAL APPROACH)

 MCGRAW-HILL EDUCATION PSYCHOLOGY APA DOCUMENTATION STYLE GUIDE

- Glossary G-1
- References R-1
- Name Index NI-1
- Subject Index SI-1

preface



Experience Psychology

Some Students Take Psychology . . . Others Experience It!

Informed by student data, *Experience Psychology* helps students understand and appreciate psychology as an integrated whole. The personalized, adaptive learning program, thought-provoking examples, and interactive assessments help students see psychology in the world around them and experience it in everyday life. *Experience Psychology* is about, well, experience—our own behaviors; our relationships at home and in our communities, in school, and at work; and our interactions in different learning environments. Grounded in meaningful real-world contexts, *Experience Psychology*'s contemporary examples, personalized author notes, and applied exercises speak directly to students, allowing them to engage with psychology and to learn verbally, visually, and experientially—by reading, seeing, and doing. Function is introduced before dysfunction, building student understanding by looking first at typical, everyday behavior before delving into the less common—and likely less personally experienced—rare and abnormal behavior. *Experience Psychology* places the science of psychology, and the research that helps students see the academic foundations of the discipline, at the forefront of the course.

With the learning system of *Experience Psychology*, students do not just “take” psychology but actively *experience* it.

Experience a Personalized Approach

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

 SMARTBOOK® **A PERSONALIZED EXPERIENCE THAT LEADS TO IMPROVED LEARNING AND RESULTS**

Students study more effectively with SmartBook.

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- **Make It Informed.** Real-time reports quickly identify the concepts that require more attention from individual students—or the entire class. SmartBook detects the content a student is most likely to forget and brings it back to improve long-term knowledge retention.

PERSONAL NOTES FROM THE AUTHOR THAT PROMOTE UNDERSTANDING

Experience Psychology, emphasizes a personal approach, with an abundance of personal pedagogical “asides” communicated directly by author Laura King to students to guide their understanding and stimulate their interest as they read. Some of these helpful notes highlight important terms and concepts; others prompt students to think critically about the complexities of the issues; still others encourage students to apply what they have learned to their prior reading or to a new situation. These mini-conversations between the author and the reader help develop students’ analytical skills for them to carry and apply well beyond their course.



Adaptation, adaptability, and adapt: Psychologists use these terms when referring to the ability to function in a changing world.

Experience the Power of Data

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

BETTER DATA, SMARTER REVISION, IMPROVED RESULTS

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

McGraw-Hill Education authors now have access to student performance data to analyze and to inform their revisions. This data is anonymously collected from the many students who use LearnSmart, the adaptive learning system that provides students with individualized assessment of their own progress. Because virtually every text paragraph is tied to several questions that students answer while using 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.

THE HEAT MAP STORY

APPRECIATING THE POWER OF STUDENT DATA

STEP 1. Over the course of three years, data points showing concepts that caused students the most difficulty were anonymously collected from Connect Psychology’s LearnSmart for *Experience Psychology, 2e*.



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



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



RESULT: Because the *Heat Map* gave Laura King empirically-based feedback at the paragraph and even sentence level, she was able to develop the new edition using precise student data that pinpointed concepts that caused students the most difficulty.

PERSONALIZED GRADING, ON THE GO, MADE EASIER

Connect Insight™ is a one-of-a-kind visual analytics dashboard—now available for both instructors and students—that provides at-a-glance information regarding student performance. The immediate analysis from Connect Insight empowers students and helps instructors improve class performance efficiently and effectively.

- **Make It Intuitive.** Instructors and students receive instant, at-a-glance views of performance matched with student activity.
- **Make It Dynamic.** Connect Insight puts real-time analytics in the user’s hands for a just-in-time approach to teaching and learning.
- **Make It Mobile.** Connect Insight is available on demand wherever and whenever needed.

Experience an Emphasis on Critical Thinking

Challenge YOUR THINKING

On Second Thought, Is Conscious Reflection Required for Moral Behavior?

Sam is the captain of a military submarine traveling under an iceberg. An onboard explosion has left the vessel with limited oxygen. One crew member is mortally injured. He will certainly die. The remaining oxygen in the sub is not enough for Sam and his crew to survive. The only way to save his crew is for Sam to shoot dead the injured crewman. Is it okay for Sam to kill him?

As you consider this moral dilemma, see if you can detect the two kinds of processes—automatic and controlled—at work. Your automatic reaction might involve the outright horror at the thought of killing the crewmember. As you reflect, though, you might consider that killing that man makes the greatest good for the greatest number: a utilitarian moral stance, one that considers the greatest good for the greatest number.

Social psychologist Jon Haidt (2001) proposed a social-intuitionist model of moral reasoning. The model claims that we often make moral decisions based on automatic, emotional reactions. From this perspective, conscious thought is used not so much to reach those decisions, but to justify them after the fact. Research using moral dilemmas like Sam’s, has shown that moral judgments often involve emotional processes and automatic reactions, rather than careful conscious thought (Greene & Haidt, 2002; Lai, Haidt, & Nosenk, 2014). Indeed, the brain regions that are active while individuals resolve personal moral dilemmas (such as the amygdala) are often those involved in automatic emotional reactions (Sinha & Greene, 2014; Xue, Wang, & Tang, 2013).

Are decisions that are based on automatic reactions less likely to be morally right? That is a fascinating question with implications for the way we think about human nature itself. Are people naturally good or bad? Are automatic impulses essentially selfish or can they be kind? Although traditionally psychologists have often assumed that prosocial behavior—that is, behavior that benefits others—is based on the ability to override one’s automatic selfish interests (Della et al., 2008), more recent research suggests

that automatic reactions might lead to nicer behavior (Dawes & others, 2012; Zaki & Mitchell, 2011). For example, a series of studies showed that, while playing a game that allowed them to be selfish or share money with another person, people who made their decision without much deliberation were more generous (Rand, Greene, & Nowak, 2012). Similarly, people who were instructed to follow their first hunch were more generous than those who were instructed to think their decisions through carefully. Such results suggest that, at times, automatic reactions are not selfish but reflect moral goodness.

Perhaps our moral choices must rely on both automatic emotional processes and slower reflective processes. Surely, we have these two ways of processing because they both play a role in important things we do, including deciding what is right (Keeley & others, 2012; Mallon & Nichols, 2011). Understanding the roles of automatic and controlled processes in moral judgment and behavior offers a glimpse into the very character of human nature itself.

If you would like to explore and reflect on your own morality, check out www.yourmorals.org, a website created by Jon Haidt and other social psychologists, where you can take self-assessments, participate in surveys, and learn more about how “moral minds” work.

What Do You Think?

- What was the last moral dilemma you faced? How did you solve it?
- Why might it be adaptive for humans to have two ways of thinking about moral dilemmas?

Experience Psychology stimulates critical reflection and analysis. The **Challenge Your Thinking** features involve students in debates relevant to findings from contemporary psychological research. Thought-provoking questions encourage examination of the evidence on both sides of a debate or issue. For example, the Challenge in the “Thinking, Intelligence, and Language” chapter asks students to reflect on whether there is a link between creative genius and psychopathology while “Social Psychology’s” Challenge prompts them to consider how ethnicity might influence the tendency to misperceive harmless objects (such as wallets, car keys, and cell phones) as handguns.

Experience Psychology’s Intersection features are also designed to spark critical thought. Showcasing studies in different areas of psychological research that focus on the same topic, the Intersections shed light on the links between, and the reciprocal influences of, this exciting work, and they raise provocative questions for student reflection and class discussion. For example, the selection for the “Motivation and Emotion” chapter, “Motivation and Behavior Genetics: Why Do We Procrastinate?” prompts students to think about whether genes can predispose individuals to procrastinate.

INTERSECTION

Emotion and Sensation: What Do Feelings Smell Like?

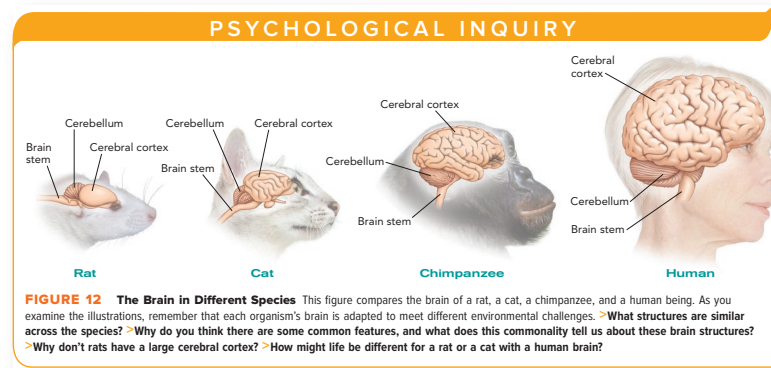
For many species, it is adaptive to send out alarm calls to members of a group. Such calls do not always involve noises. Sometimes they involve smells. For example, when faced with a hungry predator, a nervous fish might release chemicals that inform other fish in its school to escape. Unfortunately for these potential snacks, sharks also have a remarkable sense of smell. So, when a fish sends out chemical warning signals, members of its school (and sharks) can smell the fear. In nonhuman animals, such “chemosignals” provide a quick way to communicate alarms. It has long been assumed that humans do not have chemosignals, that our emotions do not cause (Wyatt, 2003). However, research has begun to suggest that our emotions may affect the odors we emit. In particular, our sweat may smell different when we are feeling afraid. In one study, participants who smelled the sweat excreted by people who were afraid were more cautious than those who smelled sweat excreted by people through physical activity (Zhou & Chen, 2009).

In several studies, Jasper de Groot and his colleagues (de Groot & others, 2012; de Groot, Semin, & Smeets, 2014) have examined whether the chemical signals emitted by a person while feeling a particular emotion fosters that same emotion in another person who smelled that person’s sweat. In one study, the researchers first collected sweat. Men, seated in a very warm room, watched one of two film clips meant to foster feelings of fear (scenes from the movie *The Shining*) or disgust (scenes from the television show *Jackass*), while absorbent pads were tucked into their armpits. These pads were then frozen until needed for the second part of the study. In that second part,

women smelled the pads (along with some unused “control pads”) while various measures were taken. First, the researchers precisely measured facial muscle activity to see if the women’s facial expressions conformed to the emotions the men were experiencing while they emitted the sweat. Results showed that women’s faces were more likely to show a disgust face when smelling the fear sweat and more likely to show a fear face when smelling the disgust sweat. In addition, the heart rates for the women were higher when sniffing the fear sweat. Finally, the emotion associated with the sniffing influenced the type of sniffing that occurred: For fear sweat, women were more likely to take a big second whiff of the sweat, but for disgust sweat, the sniff was much smaller. Importantly, the smelling portion of the study was a double-blind procedure, meaning that neither the women nor the researcher running the study knew which pads were which, and only the researcher knew that the odors in the pads were from different kinds of sweat. Of course, if they knew what they were smelling, all of the women might have been pretty disgusted! You might assume that what people do to communicate fear is SCREAM. But this research suggests that humans, like other animals, use several channels—auditory, visual, and even olfactory—to warn of danger. The study reminds us that if we want to appear calm and cool even under duress, we might amend “Never let them see you sweat” to “And never let them smell your sweat, either.”

What other emotions cause us to smell different to others?

In addition, the *Psychological Inquiry* features draw students into analyzing and interpreting figures and photos by embedding a range of critical thinking questions in selected captions.



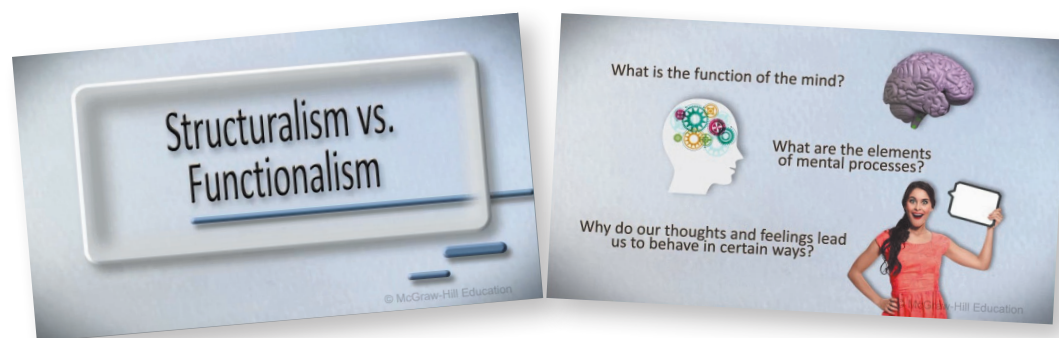
Experience an Emphasis on Active Engagement

Through *Do It!*, a series of brief, recurring sidebar activities linked to the text reading, students get an opportunity to test their assumptions and learn through hands-on exploration and discovery. Reinforcing that the science of psychology requires active participation, *Do It!* selections include, for example, an exercise on conducting an informal survey to observe and classify behaviors in a public setting, as well as an activity guiding students on how to research a “happiness gene.” Such exercises provide vibrant and involving experiences that get students thinking as psychologists do.

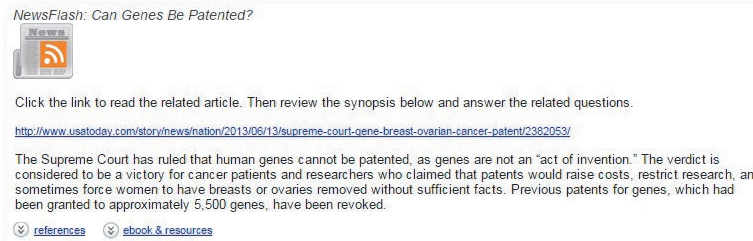
Concept Clips help students comprehend some of the most difficult ideas in introductory psychology. Colorful graphics and stimulating animations describe core concepts in a step-by-step manner, engaging students and aiding in retention. *Concept Clips* can be used as a presentational tool in the classroom or for student assessment.

Do It!

Go on a caffeine hunt. Check out the ingredient lists on your favorite beverages, snacks, and painkillers. Which of these contain caffeine? You might be surprised by how much caffeine you consume every day without even knowing it.



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



Experience the Course You Want to Teach



The **Instructor Resources** have been updated to reflect changes to the new edition; these can be accessed by faculty through Connect Psychology. Resources include the test bank, instructor's manual, PowerPoint presentation, and image gallery.



Easily rearrange chapters, combine material, and quickly upload content you have written, such as your course syllabus or teaching notes, using **McGraw-Hill Education Create**. Find the content you need by searching through thousands of leading McGraw-Hill Education 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 three to five business days or a complimentary electronic review copy via e-mail in about an hour. Experience how McGraw-Hill Education empowers you to teach your students your way: <http://create.mheducation.com>



Capture lessons and lectures in a searchable format for use in traditional, hybrid, "flipped classes" and online courses by using **Tegrity** (<http://www.tegrity.com>). 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.



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

Chapter-by-Chapter Changes

Experience Psychology, Third Edition, includes important new material while content was streamlined where possible; each chapter is up-to-date to capture the latest trends and findings in the field. The key content changes, chapter by chapter, include but are not limited to the following:

CHAPTER 1: THE SCIENCE OF PSYCHOLOGY

- New discussion of psychological research on the real versus the virtual (online) world.
- New explanation of the concept of operational definition.
- New, more detailed explanation of negative and positive correlations.
- Updated research on the long-term impact of positive emotions.
- New content on random assignment in the context of research.
- New, more detailed explanation of independent versus dependent variables.
- New Intersection feature: “Personality Psychology and Social Psychology: Does Being with Others Lead to Happiness or Is It the Other Way Around?”
- New discussion of correlational versus experimental research designs.
- New material on ethics and the potential unforeseen impact of research on subjects.
- Updated Challenge Your Thinking selection: “Is It Ethical to Use Deception in Research?”

CHAPTER 2: THE BRAIN AND BEHAVIOR

- New discussion of the way changes in the brain can produce unexpected changes in a person.
- Expanded explanation of efferent neurons.
- Expanded explanation of the impact reinterpretation has on stress levels in challenging situations.
- Expanded explanation of the parallels between the action of morphine and endorphins.
- New research covering the impact of oxytocin on new fathers.
- New information on fMRI studies of the brain at rest.
- New Intersection feature: “Neuroscience and Emotion: How Does the Brain Recognize What Is Funny?”
- New information on the association cortex.
- Updated coverage of athletes and brain injury.
- Updated research on neurogenesis.
- Updated findings from the Human Genome Project on the number of genes in humans.
- New coverage of the genome-wide association method to identify genetic variations linked to particular diseases.
- New explanation of the genotype to phenotype process.

CHAPTER 3: SENSATION AND PERCEPTION

- New research on using virtual reality to combat phantom limb pain.
- New discussion and figure on top-down and bottom-up processing.

- New discussion of sustained attention and executive attention.
- New examples of timbre.
- New Intersection selection: “Emotion and Sensation: What Do Feelings Smell Like?”

CHAPTER 4: STATES OF CONSCIOUSNESS

- Updated research on brain–computer interfaces.
- New research on metacognition and the metacognitive experience.
- Updated research on how the brain functions to produce consciousness.
- New Challenge Your Thinking feature: “On Second Thought, Is Conscious Reflection Required for Moral Behavior?”
- Updated research on the impact sleep has on memory, other cognitive processes, and immune system functioning.
- New research on dreaming as a form of mind wandering.
- New research on adolescent drug use.
- New data on cigarette smoking rates.
- New discussion of increased rates of marijuana use and legalization of medical marijuana in some states.
- Updated discussion of meditation and meditative practices.
- New Intersection selection: “Consciousness and Social Psychology: Can Lovingkindness Meditation Reduce Prejudice?”

CHAPTER 5: LEARNING

- New introduction about the complex skills and learning of service dogs.
- New Intersection feature: “Learning and Social Psychology: Can Classical Conditioning Help Us Understand the Meaning of Life?”
- New tip on distinguishing operant from classical conditioning.
- Expanded explanation of negative reinforcement.

CHAPTER 6: MEMORY

- Updated treatment of the concept of priming.
- Updated discussion of memories related to traumatic events.
- Updated discussion of errors related to eyewitness testimony.
- New Intersection selection: “Cognitive Psychology and Social Psychology: If We Can Forgive, Does That Help Us Forget?”

CHAPTER 7: THINKING, INTELLIGENCE, AND LANGUAGE

- New research on the effectiveness of effortful reflection compared with intuitive decision making.
- New coverage of loss aversion.
- New Challenge Your Thinking feature: “Is There a Link Between Creative Genius and Psychopathology?”
- New coverage of the Wechsler Adult Intelligence Scale.

- New research on the effect of childhood experiences on IQ.
- New coverage related to identifying gifted children.
- New Intersection selection: “Educational Psychology and Social Psychology: Do Teachers Have Stereotypes About Gifted Children?”
- New thinking about general intelligence and the analytical skills measured by IQ tests.

CHAPTER 8: HUMAN DEVELOPMENT

- New chapter opener about the quick-tempered childhood of Albert Einstein.
- New marginal note explaining cross-sectional versus longitudinal research designs.
- New research on alcohol consumption during pregnancy.
- Updated discussion of the problems of preterm infants.
- New research on the difficulties of early-maturing girls.
- Updated findings on context-induced brain plasticity and the adolescent brain.
- New section on nativist views of cognitive development and what infants bring with them into the world.
- All new sections on cognitive processes in early, middle, and late adulthood.
- New section on the cultural context of parenting.
- Extensively revised treatment of socioemotional development in late adulthood, including an examination of Carstensen’s socioemotional selectivity theory.
- New Intersection feature: “Developmental and Social Psychology: Is Attachment an Enduring Aspect of Life?”
- New section with updated research on marriage and families.
- Updated Challenge Your Thinking selection: “Is Parenthood Associated with Happiness?”

CHAPTER 9: MOTIVATION AND EMOTION

- New chapter opener about Medal of Honor Recipient William Kyle Carpenter
- Updated data on obesity.
- New discussion of the psychological factors related to hunger and mindless eating.
- New material and research on gender differences in sexuality and attitudes about casual sex.
- Coverage of new developments related to same-sex marriage legislation.
- New material on self-regulation, impulsivity, and procrastination.
- New Intersection feature: “Motivation and Behavior Genetics: Why Do We Procrastinate?”
- New research on compound facial expressions.
- New discussion and research on gender and emotions.

CHAPTER 10: PERSONALITY

- New chapter opener about childhood friends reuniting in adulthood.
- Expanded explanation of Freud’s view of sex as anything pleasurable.

- New margin note on remembering the difference between ego and id.
- Coverage of new research on conscientiousness and its link with grade point averages versus other personality traits.
- New Challenge Your Thinking selection: “Is There One Really Great Personality?”
- New research on delay of gratification in early childhood and its link with body mass index in later life.
- New coverage of the MMPI-2-RF and how it differs from the MMPI-2.
- Expanded discussion of face validity for measures of the big five personality traits.
- New Intersection feature: “Personality and Neuroscience: How Do the Brain’s Hemispheres Complete a Questionnaire?”

CHAPTER 11: SOCIAL PSYCHOLOGY

- New chapter organization that moves from dyads, to ever larger social contexts.
- New presentation of the definition of social psychology and the extraordinarily social quality of our species.
- New discussion of the distinction between social psychology and sociology.
- All new discussion of the broad range of topics researched in social psychology and its overlap with other areas of psychology.
- Expanded discussion of the bystander effect.
- Expanded and updated information on first impressions, stereotypes, and stereotype threat.
- Updated research on positive illusions.
- New discussion and example of altruism, with updated research.
- New discussion and research on the psychological factors involved in altruism.
- Updated research on the role of hormones on aggressive behavior and vice versa.
- New research on the impact of love in young adults: increased depression and anxiety but better sleep quality.
- New discussion of the awkwardness involved in openly discussing race in the United States and the problems with labels.
- New Challenge Your Thinking feature: “Why Does a Cell Phone Look Like a Gun?”

CHAPTER 12: PSYCHOLOGICAL DISORDERS

- New chapter opener describing the life stories of people suffering from schizophrenia and other psychological disorders.
- Explanation of the vulnerability-stress hypothesis as it relates to the development of psychological disorders.
- Information on the Affordable Care Act coverage for psychological disorders.
- Extensively updated Challenge Your Thinking selection on ADHD.
- New research on the involvement of neurotransmitters and the limbic system in OCD.
- Updated discussion of biological factors related to depressive disorders.
- New data on suicide rates among adolescents compared with emerging adults.
- Updated section on psychological factors that contribute to suicide.

- New Intersection selection: “Clinical Psychology and Emotion: Does Positive Emotion Play a Role in Anorexia Nervosa?”
- Clarification of research on structural brain differences at birth and schizophrenia.
- New discussion of connections between schizophrenia and regulation of the neurotransmitter dopamine.
- Updated research on how psychologists view the role of life experience in relation to schizophrenia.
- Extensively revised section on the role of sociocultural factors in schizophrenia.
- Updated research on factors that may produce antisocial personality disorder.
- New end-of-section Self-Quiz on factors and theories related to suicide.
- New material on stereotypes regarding violent behavior of those with psychological disorders.

CHAPTER 13: THERAPIES

- Updated chapter opener on the importance of social media in determining when someone needs help.
- New section comparing psychological and biological approaches to treatment; new description of the controversy over prescription privileges for clinical psychologists.
- New organizational structure, lending prominence to psychological approaches to treatment.
- Clarification of the differing approaches of biomedical and psychotherapeutic perspectives in treating psychological disorders; new research on empirically supported treatments and the controversy of whether samples used in studies are representative of the individuals clinicians see in practice.
- New coverage of research on applied behavior analysis in treating individuals with autism; and research studying the success of early and intense behavioral treatment for autism spectrum disorders.
- Expanded coverage of the effectiveness of psychotherapy and the factors involved with successful treatment; systematic desensitization; distinctions between different therapies (insight versus immediate symptoms/skills and directive or nondirective); research on cognitive-behavior therapy in treating many disorders, including anxiety disorders, disorders of emotion and mood, schizophrenia (in combination with drug therapy), and personality disorders; and research on integrative therapy to adjust the treatment to the individual client.
- Updated listing of medications for treating anxiety, depression, bipolar disorder, and schizophrenia; new research on side effects of antipsychotic medications.
- Reorganization and revision of chapter to reflect current treatment practices.

CHAPTER 14: HEALTH PSYCHOLOGY

- New chapter opener on decision making related to health and health care.
- Exploration of new research on the power of optimism in promoting positive functioning.
- Expanded explanation of implementation intentions as they relate to motivation and health goals.
- New material on the effect of social support on loneliness and depression.

- New research on the role of church-based social support for African Americans.
- Updated information on the link between stress and immune system functioning.
- Updated research on the link between stress and factors related to cardiovascular disease.
- Updated material on obesity and overeating.
- New Intersection selection: “Health Psychology and Cognition: Can Mindless Processing Enhance Healthy Eating?”
- Updated data on smoking rates.
- Updated data on AIDS deaths.

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1

The Science of Psychology

The Virtual and the Real You

Many of us live in two worlds at once—the real world and a virtual one that exists on computers, smartphones, and gaming servers. In the real world, we have friends we see daily, but in the virtual world, we may know hundreds or even thousands more. We connect with these folks on social media, online message boards, or multiplayer games. In the virtual world, we may do things we never would in the real world, such as share thoughts and feelings we wouldn't in person or occupy roles that don't really exist (like a clumsy zombie or his enemy a wily pea plant). Still, the real and virtual worlds are connected. Research shows that college students often use online profiles to express their true selves (Back & others, 2010) and status updates to share their intimate feelings (Manago, Taylor, & Greenfield, 2012). Even though they occur in the virtual world, being friended feels good and being unfriended feels bad (Sibona, 2014). College students with large Facebook networks report higher feelings of life satisfaction (Manago, Taylor, & Greenfield, 2012). Sometimes events in the two worlds collide: The most common reason for unfriending a coworker is that person's behavior in the (real) workplace (Sibona, 2014). One thing the real and virtual world have in common is you—the person who occupies them both.

Psychologists are scientists who are interested in all of the things you do, in all of the worlds you occupy. Like a fan following the minutiae of a celebrity's Twitter feed, psychologists are passionate about what they study—and what they study is behavior. Thousands of dedicated scientists investigate phenomena such as how the human brain responds to a picture flashed on a screen and how the eyes adjust to a sunny day and how a person feels when she discovers she's been unfriended. There is not a single thing people do that is not fascinating to some psychologist somewhere.





This chapter begins by defining psychology and reviewing the history of the field. Next we survey seven broad approaches that characterize psychological science today. Then, in sequence, we examine the elements of the scientific method, review the different kinds of research psychologists do, and consider the importance of conducting psychological research according to ethical guidelines. We conclude with a look at applications of psychology to daily life—a central focus of *Experience Psychology*.

1 Defining Psychology and Exploring Its Roots



What is your definition of psychology? When you think of the word psychology, what first comes to mind?

Formally defined, **psychology** is the scientific study of behavior and mental processes. Let's consider the three key terms in this definition: *science*, *behavior*, and *mental processes*.

As a **science**, psychology uses systematic methods to observe human behavior and draw conclusions. The goals of psychological science are to describe, predict, and explain behavior. In addition, psychologists are often interested in controlling or changing behavior, and they use scientific methods to examine interventions that might help, for example, reduce violence or promote happiness.

Researchers might be interested in knowing whether individuals will help a stranger who has fallen down. The researchers could devise a study in which they observe people walking past a person who needs help. Through many observations, the researchers could come to *describe* helping behavior by counting how many times it occurs in particular circumstances. They might also try to *predict* who will help, and when, by examining characteristics of the individuals studied. Are happy people more likely to help? Are women or men more likely to help? After the psychologists have analyzed their data, they also will want to *explain* why helping behavior occurred when it did. Finally, they might be interested in changing helping behavior, such as by devising strategies to increase helping.

Behavior is everything we do that can be directly observed—two people kissing, a baby crying, a college student riding a motorcycle to campus. **Mental processes** are the thoughts, feelings, and motives that each of us experiences privately but that cannot be observed directly. Although we cannot directly see thoughts and feelings, they are nonetheless real. They include *thinking* about kissing someone, a baby's *feelings* when its mother leaves the room, and a student's *memory* of a motorcycle trip.

psychology

The scientific study of behavior and mental processes.

science

The use of systematic methods to observe the natural world, including human behavior, and to draw conclusions.

mental processes

The thoughts, feelings, and motives that people experience privately but that cannot be observed directly.

behavior

Everything we do that can be directly observed.



Behavior includes the observable act of two people kissing; mental processes include their unobservable thoughts about kissing.

(both) © Betsie Van Der Meer/Taxi/Getty Image

The Psychological Frame of Mind

What makes for a good job, a good marriage, or a good life? Psychologists approach these big life questions as scientists. Psychology is a rigorous discipline that tests assumptions, bringing scientific data to bear on the questions of central interest to human beings (Jackson, 2015; Kantowitz, Roediger, & Elmes, 2015). Psychologists conduct research and rely on that research to provide evidence for their conclusions. They examine the available evidence about some aspect of mind and behavior, evaluate how strongly the data (information) support their hunches, analyze disconfirming evidence, and carefully consider whether they have explored all possible factors and explanations (Stangor, 2015). At the core of this scientific approach are four attitudes: *critical thinking*, *curiosity*, *skepticism*, and *objectivity*.

Like all scientists, psychologists are *critical thinkers*. **Critical thinking** is the process of thinking deeply and actively, asking questions, and evaluating the evidence (Stanovich, 2013). Critical thinkers question and test what some people say are facts. They examine research to see how soundly it supports an idea (Christensen, Johnson, & Turner, 2015). Critical thinking reduces the likelihood that conclusions will be based on unreliable personal beliefs, opinions, and emotions. Critical thinking also comes into play when scientists consider the conclusions they draw from research. As critical thinkers who are open to new information, scientists must tolerate uncertainty, knowing that even long-held views are subject to revision.

Critical thinking is very important as you read *Experience Psychology*. Some of what you read might fit with your beliefs, and some might challenge you to change or reconsider them. Actively engaging in critical thinking is vital to making the most of psychology. As you study the field, think about how what you are learning relates to your life experiences and your assumptions about human behavior.

Scientists are also *curious*. The scientist notices things in the world (a star in the sky, an insect, a happy person) and wants to know what it is and why it is that way. Science involves asking questions, even very big questions such as where did the earth come from, and how does love between two people endure for 50 years? Thinking like a psychologist means opening your mind and imagination to wondering why things are the way they are.

In addition, scientists are *skeptical* (Smith & Davis, 2013). Skeptical people challenge whether a supposed fact is really true. Being skeptical can mean questioning what “everybody knows.” There was a time when “everybody knew” that women were morally inferior to men, that race could influence a person’s IQ, and that the earth was flat. Psychologists, like all scientists, look at assumptions in new and questioning ways. Psychology is different from common sense because psychologists are skeptical of commonsensical answers.

Psychological research often turns up the unexpected in human behavior. Such results are called *counterintuitive* because they contradict our intuitive impressions of how the world works. Consider the following study, which demonstrates how a little dose of negative information can actually make consumers feel more positive about a product (Ein-Gar, Shiv, & Tormala, 2012). Students who were on their way to an exam were approached by an experimenter offering to sell them chocolate bars. All of the participants were told that the chocolate bars were a favorite among consumers, that they were nicely chilled (the study was conducted on a hot day in California), and that they were being offered at a special discount of only 50 cents. However, half of the participants received one more piece of information: The chocolate bars were just a little broken. The experimenter showed them an example of a bar with minor breakage. Participants who were given this mild negative information ended up purchasing more chocolate bars than those who heard only the positive information. Why?

The experimenters reasoned that when we have encountered positive information about something, a little bit of negative information causes us to stop and reconsider that positive information. We think about it more and eventually come to evaluate a mildly “blemished” product as actually really good. Note that these results were limited to students who were preoccupied by a test. Other students

critical thinking

The process of thinking deeply and actively, asking questions, and evaluating the evidence.



You might be wondering about the names and dates in parentheses. They are **research citations** that identify the authors of particular studies and the year each study was published. If you see an especially interesting study, you might look it up in the References at the end of the chapter and check it out online or in your school’s library.

who were not thinking about a test bought less chocolate when it was presented as broken. The researchers' explanation is that when we do not have time or energy to think things through, a minor blemish can enhance evaluations of a product.

Last, practicing science also means being *objective*. Being objective involves trying to see things as they really are, not just as the observer would like them to be. Scientific knowledge ultimately is based on objective evidence.

To gather objective evidence, scientists rely on empirical methods. The **empirical method** involves gaining knowledge by observing events, collecting data, and reasoning logically. For scientists, objectivity means waiting to see what the evidence tells them rather than going with their hunches. Does the latest herbal dietary supplement really help relieve depression? A scientist would say, "That's an empirical question," meaning that hard evidence is required to answer it. An objective thinker insists on sound evidence before drawing conclusions. Like critical thinking, relying on evidence to provide the foundation for conclusions means being open to uncertainty. Empirical evidence provides the best answers to questions at any given moment.

Once you start to think like a psychologist, the world begins to look like a different place. Easy answers and simple assumptions will not do. As you can probably imagine, psychologists, as a group, are people with many different opinions about many different things. If a number of these critical thinkers were to gather around a table, it is a safe bet that they would have a lively conversation.

Indeed, as you will see throughout *Experience Psychology*, there are many things about which psychologists disagree, and psychology (like any science) is filled with debate and controversy. For example, one controversy in psychology concerns the emergence of so-called Generation Me (Twenge, 2006). Jean Twenge and her colleagues (Twenge, 2006; Twenge & Campbell, 2010) argue that Americans born since the 1980s are different from previous generations in that they are unusually self-confident, self-assertive, and self-centered. Based on her research examining scores on questionnaires concerning *narcissism* (a condition of intense, unhealthy self-love) over many years, Twenge (2006) refers to these individuals as Generation Me. She suggests that we are in the midst of an epidemic of narcissism. Other psychologists, however, sharply challenge this claim. In doing so, they present data showing no changes in narcissism over the last three decades (Trzesniewski & Donnellan, 2010).

So, debate and controversy are a natural part of thinking like a psychologist. Psychology has advanced as a field because psychologists do not always agree with one another about why mind and behavior work the way they do. Psychologists have reached a more accurate understanding of human behavior because psychology fosters controversies and because psychologists think deeply and reflectively and examine the evidence on all sides. A good place to try out your critical thinking skills is by revisiting the definition of psychology.

empirical method

Gaining knowledge through the observation of events, the collection of data, and logical reasoning.



This is why researchers often say that a study "supports" a particular prediction, but rarely if ever say that it "proves" anything.

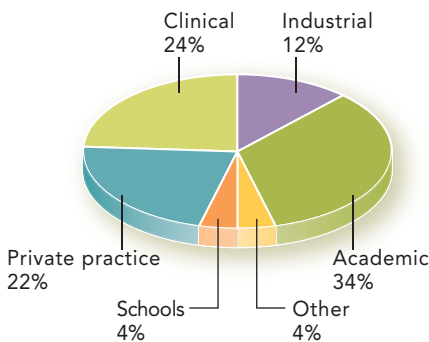


FIGURE 1
Settings in Which Psychologists Work

More psychologists work in academic settings (34 percent), such as colleges and universities, than in any other setting. However, clinical (24 percent) and private practice (22 percent) settings—both of which are contexts in which many psychologists in the mental health professions work—together make up almost half of the total settings.

Psychology as the Science of All Human Behavior

As you consider the general definition of psychology as the science of human behavior, you might be thinking, okay, where's the couch? Where's the mental illness? Psychology certainly includes the study of therapy and psychological disorders. Clinical psychologists are psychologists who specialize in studying and treating psychological disorders. By definition, though, psychology is a much more general science (Shiraev, 2011), practiced in several environments in addition to clinical settings (Figure 1). In fact, the most common place to find psychologists is in academic settings (colleges or universities). How did we end up with the idea that psychology is only about mental illness? Surely, psychological disorders are very interesting, and the media often portray psychologists as therapists. Yet the view

of psychology as the science of what is wrong with people started long before TV was even invented.

When they think of psychology, many people think of Sigmund Freud (1856–1939). Freud believed that most of human behavior is caused by dark, unpleasant, unconscious impulses pressing for expression. For Freud, even the average person on the street is a mysterious well of unconscious desires. Certainly, Freud has had a lasting impact on psychology and on society. Consider, though, that Freud based his ideas about human nature on the patients he saw in his clinical practice—individuals who were struggling with psychological problems. His experiences with these patients, as well as his analysis of himself, colored his outlook on all of humanity. Freud once wrote, “I have found little that is ‘good’ about human beings on the whole. In my experience most of them are trash” (1918/1996).



You have probably heard of a “Freudian slip.” Freud’s name has become part of our everyday language.

Freud’s view of human nature has crept into general perceptions of what psychology is all about. Imagine, for example, that you are seated on a plane, having a pleasant conversation with the woman (a stranger) sitting next to you. At some point you ask your seatmate what she does for a living, and she informs you she is a psychologist. You might think to yourself, “Uh oh. What have I already told this person? What secrets does she know about me that I don’t know about myself? Has she been analyzing me this whole time?” Would you be surprised to discover that this psychologist studies happiness? Or intelligence? Or the processes related to the experience of vision? The study of psychological disorders is a very important aspect of psychology, but it represents only one part of the science of psychology.

Psychology seeks to understand the truths of human life in *all* its dimensions, including people’s best and worst experiences, and everything in between. Research on the human capacity for forgiveness demonstrates this point (Balliet, Li, & Joireman, 2011; Harper & others, 2014; McCullough, Kurzban, & Tabak, 2011, 2013). Forgiveness is the act of letting go of anger and resentment toward someone who has done something harmful to us. Through forgiveness we cease seeking revenge or avoiding the person who did us harm, and we might even wish that person well (Lin & others, 2014; Tuck & Anderson, 2014).

In October 2006, after Charles Carl Roberts took 10 young Amish girls hostage in a one-room schoolhouse in Pennsylvania, eventually killing 5 of them and wounding 5 others before killing himself, the grief-stricken Amish community focused not on hatred and revenge but on forgiveness. As funds were being set up for the victims’ families, the Amish insisted on establishing one for the murderer’s family. They prepared simple funerals for the dead girls, and the community invited the killer’s wife to attend. The science of psychology has much to offer to our understanding not only of the violent acts of the perpetrator but also of the forgiveness of the victims.

The willingness of these Amish people to forgive this horrible crime is both remarkable and puzzling. Can we scientifically understand the human ability to forgive even what might seem to be unforgivable? A number of psychologists have taken up the topic of forgiveness in research and clinical practice (Jacinto & Edwards, 2011; Worthington & others, 2011). Michael McCullough and his colleagues (McCullough & others, 2010) have shown that the capacity to forgive is an unfolding process that often takes time. For the Amish, their deep religious faith led them to embrace forgiveness, while many others might have been motivated to seek revenge and retribution. Researchers also have explored the relationship between religious commitment and forgiveness (McCullough, Bono, & Root, 2007), the cognitive skills required for forgiveness (Pronk & others, 2010), and even the potential dark side of forgiveness, which might emerge, for example, when forgiveness leads an abusive spouse to feel free to continue a harmful behavior (McNulty, 2011).



The murder in 2006 of five Amish schoolgirls evoked feelings in the community not of hatred and revenge but of forgiveness.

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Some psychologists argue that the field has focused too much on the negative aspects of humanity and neglected topics that reflect the best of human life (Seligman & Csikszentmihalyi, 2000; Snyder, Lopez, & Pedrotti, 2010). Others insist that psychology would benefit more from studying human weaknesses (Lazarus, 2003). The fact is that to be a truly general science of human behavior, psychology must address all sides of human experience. Surely, controversy is a part of any science. Healthy debate characterizes the field of psychology, and a new psychological perspective sometimes arises when one scientist questions the views of another. Such ongoing debate is a sign of a lively discipline. Indeed, the very birth of the field was marked by debate. Great minds do not always think alike, especially when they are thinking about psychology.

Psychology in Historical Perspective

Psychology seeks to answer questions that people have been asking for thousands of years—for example:

- How do we learn?
- What is memory?
- Why does one person grow and flourish while another struggles?

The notion that such questions might be answered through scientific inquiry is relatively new. From the time human language included the word *why* and became rich enough to let people talk about the past, we have been creating myths to explain why things are the way they are. Ancient myths attributed most important events to the pleasure or displeasure of the gods: When a volcano erupted, the gods were angry; if two people fell in love, they had been struck by Cupid's arrows. Gradually, myths gave way to *philosophy*—the rational investigation of the underlying principles of being and knowledge. People attempted to explain events in terms of natural rather than supernatural causes.

Western philosophy came of age in ancient Greece in the fourth and fifth centuries B.C.E. Socrates, Plato, Aristotle, and others debated the nature of thought and behavior, including the possible link between the mind and the body. Later philosophers, especially René Descartes, argued that the mind and body were completely separate, and they focused their attention on the mind. Psychology grew out of this tradition of thinking about the mind and body. The influence of philosophy on contemporary psychology persists today, as researchers who study emotion still talk about Descartes, and scientists who study happiness often refer to Aristotle (McMahan & Estes, 2011).

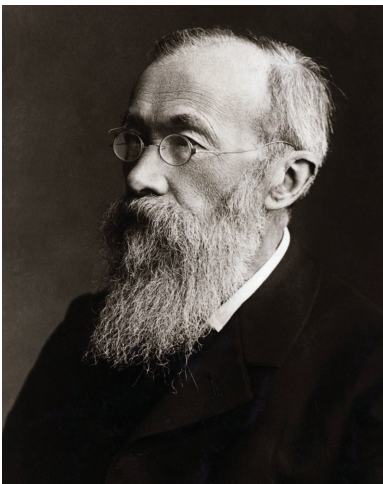
In addition to philosophy, psychology has roots in the natural sciences of biology and physiology (Kardas, 2014; Schultz & Schultz, 2012). Indeed, it was Wilhelm Wundt (1832–1920), a German philosopher-physician, who put together the pieces of the philosophy–natural science puzzle to create the academic discipline of psychology. Some historians like to say that modern psychology was born in December 1879 at the University of Leipzig, when Wundt and his students (most notably E. B. Titchener) performed an experiment to measure the time lag between the instant a person heard a sound and when that person pressed a telegraph key to signal that he had heard it.

What was so special about this experiment? Wundt's study was about the workings of the brain: He was trying to measure the time it took the human brain and nervous system to translate information into action. At the heart of this experiment was the idea that mental processes could be measured. This focus ushered in the new science of psychology.

Wundt and his collaborators concentrated on discovering the basic elements, or “structures,” of mental processes. Their approach was called **structuralism** because of its focus on identifying the elemental parts or structures of the human mind. The method they used in the study of mental structures was

structuralism

Wundt's approach to discovering the basic elements, or structures, of mental processes.



Wilhelm Wundt (1832–1920)

Wundt founded the first psychology laboratory (with his two coworkers) in 1879 at the University of Leipzig in Germany.

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introspection (literally, “looking inside”). For this type of research, a person sat in a laboratory and was asked to think (to introspect) about what was going on mentally as various events took place. For example, the individual might be subjected to a sharp, repetitive clicking sound and then might be asked to report whatever conscious feelings the clicking produced. What made this method scientific was the systematic, detailed self-reports required of the person in the controlled laboratory setting.

Although Wundt is most often regarded as the founding father of modern psychology, it was psychologist and philosopher William James (1842–1910), perhaps more than anyone else, who gave the field an American stamp. From James’s perspective, the key question for psychology is not so much what the mind is (that is, its structures) as what it is for (its purpose or function). James’s view was eventually named *functionalism*.

In contrast to structuralism, which emphasized the components of the mind, **functionalism** probed the functions and purposes of the mind and behavior in the individual’s adaptation to the environment. Whereas structuralists were looking inside the mind and searching for its structures, functionalists focused on human interactions with the outside world to understand the purpose of thoughts. If structuralism is about the “what” of the mind, functionalism is about the “why.”

A central question in functionalism is, why is human thought *adaptive*? When we talk about whether a characteristic is adaptive, we are concerned with how it makes an organism better able to survive. So, the functionalist asks, why are people better off because they can think than they would be otherwise? Unlike Wundt, James did not believe in the existence of rigid structures of the mind. Instead, James saw the mind as flexible and fluid, characterized by constant change in response to a continuous flow of information from the world. Not surprisingly, James called the natural flow of thought a “stream of consciousness.”

Functionalism fit well with the theory of evolution through natural selection proposed by British naturalist Charles Darwin (1809–1882). In 1859, Darwin published his ideas in *On the Origin of Species*. He proposed the principle of **natural selection**, an evolutionary process in which organisms that are best adapted to their environment will survive and, importantly, produce offspring. Darwin noted that members of any species are often locked in competition for scarce resources such as food. Natural selection is the process by which the environment determines who wins that competition. Darwin asserted that organisms with biological features that led to survival and reproduction would be better represented in subsequent generations. Over many generations, organisms with these characteristics would constitute a larger percentage of the population. Eventually this process could change an entire species. If environmental conditions changed, however, other characteristics might become favored by natural selection, moving the process in a different direction (Cowan, 2015).

If you are unfamiliar with Darwin’s theory of evolution, it might be helpful to consider the simple question, why do giraffes have long necks? An early explanation might have been that giraffes live in places where the trees are very tall, and so the creatures must stretch their necks to get their food—leaves. Lots of stretching might lead to adult giraffes that have longer necks. This explanation does not tell us, though, why giraffes are *born* with long necks. A characteristic cannot be passed from one generation to the next unless it is recorded in the *genes*, those collections of molecules that are responsible for heredity (Cummings, 2014).

According to evolutionary theory, species change through random genetic mutation (Mader, 2014). That means that, essentially by accident, some members of a species are born with genetic characteristics that make them different from other members (for instance, some lucky giraffes being born with unusually long necks). If these changes are adaptive (for example, if they help those giraffes compete for food, survive, and reproduce), they become more common in members of the species. So, presumably long, long ago, some giraffes were genetically predisposed to have longer necks, and some



Introspection has its limits. Many behaviors are hard to explain using introspection. Think about talking, for example. You somehow know where you are heading even as the words are tumbling out of your mouth, but you cannot say where those words are coming from.

functionalism

James’s approach to mental processes, emphasizing the functions and purposes of the mind and behavior in the individual’s adaptation to the environment.

natural selection

Darwin’s principle of an evolutionary process in which organisms that are best adapted to their environment will survive and produce offspring.



William James (1842–1910)

James’s approach became known as functionalism.

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It turns out that giraffes don't eat food from tall trees. Instead, they use their long necks to fight!

giraffes were genetically predisposed to have shorter necks. Only those with the long necks survived to reproduce, giving us the giraffes we see today. The survival of the giraffes with long necks is a product of natural selection. Evolutionary theory implies that the way we are, at least partially, is the way that is best suited to survival in our environment (Buss, 2012; Johnson, 2015).

Darwin's theory continues to influence psychologists today because it is strongly supported by observation. We can make such observations every day. Right now, for example, in your kitchen sink, various bacteria are locked in competition for scarce resources in the form of those tempting food particles from your last meal. When you use an antibacterial cleaner, you are playing a role in natural selection, because you are effectively killing off the bacteria that cannot survive the cleaning agents. However, you are also letting the bacteria that are genetically adapted to survive that cleaner to take over the sink. The same principle applies to taking an antibiotic medication at the first sign of a sore throat or an earache. By killing off the bacteria that may be causing the illness, you are creating an environment where their competitors (so-called antibiotic-resistant bacteria) may flourish. These observations powerfully demonstrate Darwinian selection in action.

If structuralism won the battle to be the birthplace of psychology, functionalism won the war. To this day, psychologists continue to talk about the adaptive nature of human characteristics. Indeed, from these beginnings, psychologists have branched out to study more aspects of human behavior than Wundt or James might have imagined. We now examine various contemporary approaches to the science of psychology.

self-quiz

- Which of the following statements is correct?
 - There are many controversies in the field of psychology.
 - Psychologists on the whole agree among themselves on most aspects of the field.
 - Psychologists do not engage in critical thinking.
 - There are few controversies in the field of psychology.
 - Of the following, the characteristic that is *not* at the heart of the scientific approach is
 - skepticism.
 - critical thinking.
 - prejudging.
 - curiosity.
 - Charles Darwin's work is relevant to psychology because
 - Darwin's research demonstrated that there are few differences between humans and animals.
 - Darwin's principle of natural selection suggests that human behavior is partially a result of efforts to survive.
 - Darwin stated that humans descended from apes, a principle that allows psychologists to understand human behavior.
 - Darwin created functionalism.
- APPLY IT!** 4. Two psychologists, Clayton and Sam, are interested in studying emotional expressions. Clayton wants to determine whether emotional expression is healthy and if it has an influence on well-being. Sam is interested in describing the types of emotions people express and building a catalog of all the emotions and emotional expressions that exist. In this example, Clayton is most like _____ and Sam is most like _____.
- Wilhelm Wundt; William James
 - William James; Wilhelm Wundt
 - Wilhelm Wundt; Sigmund Freud
 - Sigmund Freud; Wilhelm Wundt

2 Contemporary Approaches to Psychology

In this section we survey seven different approaches—biological, behavioral, psychodynamic, humanistic, cognitive, evolutionary, and sociocultural—that represent the intellectual backdrop of psychological science.

biological approach

An approach to psychology focusing on the body, especially the brain and nervous system.

The Biological Approach

Some psychologists examine behavior and mental processes through the **biological approach**, which is a focus on the body, especially the brain and nervous system. For

example, researchers might investigate the way your heart races when you are afraid or how your hands sweat when you tell a lie. Although a number of physiological systems may be involved in thoughts and feelings, perhaps the largest contribution to physiological psychology has come through the emergence of neuroscience (Botvinick & Braver, 2015; Qiu, Mori, & Miller, 2015).

neuroscience

The scientific study of the structure, function, development, genetics, and biochemistry of the nervous system, emphasizing that the brain and nervous system are central to understanding behavior, thought, and emotion.

Neuroscience is the scientific study of the structure, function, development, genetics, and biochemistry of the nervous system. Neuroscience emphasizes that the brain and nervous system are central to understanding behavior, thought, and emotion (Van Horn, 2014; Zhao & others, 2014). Neuroscientists believe that thoughts and emotions have a physical basis in the brain. Electrical impulses zoom throughout the brain's cells, releasing chemical substances that enable us to think, feel, and behave. Our remarkable human capabilities would not be possible without the brain and nervous system, which constitute the most complex, intricate, and elegant system imaginable. Although biological approaches might sometimes seem to reduce complex human experience to simple physical structures, developments in neuroscience have allowed psychologists to understand the brain as an amazingly complex organ, perhaps just as complex as the psychological processes linked to its functioning (Casey, 2015).



Richard J. Davidson of the University of Wisconsin, Madison, shown with the Dalai Lama, is a leading researcher in behavioral neuroscience.

Courtesy of Richard Davidson, University of Wisconsin, Madison. Photo by Jeff Miller.

The Behavioral Approach

The **behavioral approach** emphasizes the scientific study of observable behavioral responses and their environmental determinants. It focuses on an organism's visible behaviors, not thoughts or feelings. The psychologists who adopt this approach are called *behaviorists*. Under the intellectual leadership of John B. Watson (1878–1958) and B. F. Skinner (1904–1990), behaviorism dominated psychological research during the first half of the twentieth century.

Skinner (1938) emphasized that psychology should be about what people do—their actions and behaviors—and should not concern itself with things that cannot be seen, such as thoughts, feelings, and goals. He believed that rewards and punishments determine our behavior. For example, a child might behave in a well-mannered fashion because her parents have rewarded this behavior. We do the things we do, say behaviorists, because of the environmental conditions we have experienced and continue to experience.

Contemporary behaviorists still emphasize the importance of observing behavior to understand an individual, and they use rigorous methods advocated by Watson and Skinner (Gariépy & others, 2014). They also continue to stress the importance of environmental determinants of behavior (Martin & Pear, 2014). However, not every behaviorist today accepts the earlier behaviorists' rejection of thought processes, which are often called *cognition* (Bandura, 2011a, 2011b).

behavioral approach

An approach to psychology emphasizing the scientific study of observable behavioral responses and their environmental determinants.

The Psychodynamic Approach

The **psychodynamic approach** emphasizes unconscious thought, the conflict between biological drives (such as the drive for sex) and society's demands, and early childhood family experiences. Practitioners of this approach believe that sexual and aggressive impulses buried deep within the unconscious mind influence the way people think, feel, and behave.

psychodynamic approach

An approach to psychology emphasizing unconscious thought, the conflict between biological drives (such as the drive for sex) and society's demands, and early childhood family experiences.