

RICHARD J. GERRIG

PSYCHOLOGY AND LIFE





Why Do You Need This New Edition?

6 Good Reasons Why You Should Buy This New Edition of *Psychology and Life*!

1. This edition of *Psychology and Life* is fresh with the most up-to-date coverage and brimming with over 560 new references. Our goal is to be the most current, most accurate, and most accessible treatment of our discipline today. An in-depth list of updates can be found in the preface.
2. This edition of *Psychology and Life* presents cutting-edge research on interactions of genes and environments. For much of its history, psychology has asked the question “Nature or nurture?” However, in recent years researchers have demonstrated important instances in which nature (genes) have an impact only in particular circumstances of nurture (environments). This edition provides examples of these interactions for central topics such as intelligence, attachment, and psychopathology.
3. *Psychology and Life* is now accompanied by the brand-new MyPsychLab Video Series! This new series offers instructors and students the most current and cutting-edge introductory psychology video content available anywhere. These exclusive videos take the viewer into today’s research laboratories, inside the body and brain through breathtaking animations, and out into the street for real-world applications. Guided by the Design, Development, and Review team, a diverse group of introductory psychology professors, this comprehensive new series features 17 half-hour episodes organized around the major topics of the introductory psychology course syllabus.
4. In addition to the vast topical updates made to this edition, we have replaced more than one-third of the nearly 140 featured studies, highlighted with dark fuchsia brackets throughout the text. These major studies showcase the scientific process that drives psychological research.
5. Every feature box in each chapter has been taken into consideration during this revision. Many boxes contain updated research, and 11 of the *Critical Thinking in Your Life* and *Psychology in Your Life* boxes have been replaced with new topics altogether.
6. Throughout the text, you will find references to the new Experiments Tool in MyPsychLab. Just as *Psychology and Life* emphasizes the process behind the science of psychology, the Experiments Tool will allow you to become an active part of that process by participating in key psychological experiments and inventories.

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20TH EDITION

Psychology and Life

Richard J. Gerrig

Stony Brook University

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To Phil Zimbardo, for entrusting me with
Psychology and Life.

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Brief Contents

1	PSYCHOLOGY AND LIFE	1
2	RESEARCH METHODS IN PSYCHOLOGY	20
	STATISTICAL SUPPLEMENT	38
3	THE BIOLOGICAL AND EVOLUTIONARY BASES OF BEHAVIOR	46
4	SENSATION AND PERCEPTION	79
5	MIND, CONSCIOUSNESS, AND ALTERNATE STATES	120
6	LEARNING AND BEHAVIOR ANALYSIS	144
7	MEMORY	173
8	COGNITIVE PROCESSES	206
9	INTELLIGENCE AND INTELLIGENCE ASSESSMENT	239
10	HUMAN DEVELOPMENT ACROSS THE LIFE SPAN	260
11	MOTIVATION	297
12	EMOTION, STRESS, AND HEALTH	322
13	UNDERSTANDING HUMAN PERSONALITY	356
14	PSYCHOLOGICAL DISORDERS	385
15	THERAPIES FOR PSYCHOLOGICAL DISORDERS	418
16	SOCIAL PSYCHOLOGY	446

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Contents

Preface xix

1 PSYCHOLOGY AND LIFE 1

WHAT MAKES PSYCHOLOGY UNIQUE? 2

Definitions 2

The Goals of Psychology 3

Critical Thinking in Your Life: Does “Comfort Food” Really Give Comfort? 6

THE EVOLUTION OF MODERN PSYCHOLOGY 5

Psychology’s Historical Foundations 5

Women as Pioneering Researchers 8

Perspectives on Psychology 9

WHAT PSYCHOLOGISTS DO 14

Psychology in Your Life: In What Ways Do Psychologists Participate in the Legal System? 16

HOW TO USE THIS TEXT 16

Study Strategies 16

Study Techniques 17

Recapping Main Points 17

Key Terms 18

Practice Test 19

2 RESEARCH METHODS IN PSYCHOLOGY 20

THE PROCESS OF RESEARCH 21

Observer Biases and Operational Definitions 22

Experimental Methods: Alternative Explanations and the Need for Controls 24

Correlational Methods 27

Psychology in Your Life: Does Wishful Thinking Affect How You Evaluate Information? 29

PSYCHOLOGICAL MEASUREMENT 28

Achieving Reliability and Validity 30

Self-Report Measures 30

Behavioral Measures and Observations 30

ETHICAL ISSUES IN HUMAN AND ANIMAL RESEARCH 32

Informed Consent 33

Risk/Gain Assessment 33

Intentional Deception 33

Debriefing 33

Issues in Animal Research 33

BECOMING A CRITICAL CONSUMER OF RESEARCH 34

Critical Thinking in Your Life: Why Is Skill with Numbers Important? 35

Recapping Main Points 35

Key Terms 36

Practice Test 37

STATISTICAL SUPPLEMENT 38

UNDERSTANDING STATISTICS: ANALYZING DATA AND FORMING CONCLUSIONS 38

ANALYZING THE DATA 39

Descriptive Statistics 40

Inferential Statistics 43

BECOMING A WISE CONSUMER OF STATISTICS 45

Key Terms 45

3 THE BIOLOGICAL AND EVOLUTIONARY BASES OF BEHAVIOR 46

HEREDITY AND BEHAVIOR 47

- Evolution and Natural Selection 47
- Variation in the Human Genotype 50

THE NERVOUS SYSTEM IN ACTION 54

- The Neuron 54
- Action Potentials 56
- Synaptic Transmission 58
- Neurotransmitters and Their Functions 59

BIOLOGY AND BEHAVIOR 60

- Eavesdropping on the Brain 60
- Psychology in Your Life: How Does Your Brain Determine Trust?* 61
- The Nervous System 64
- Brain Structures and Their Functions 65
- Hemispheric Lateralization 71
- The Endocrine System 73
- Plasticity and Neurogenesis: Our Changing Brains 74

Critical Thinking in Your Life: How Does Culture Become “Embrained”? 76

Recapping Main Points 76

Key Terms 77

Practice Test 78

4 SENSATION AND PERCEPTION 79

SENSORY KNOWLEDGE OF THE WORLD 80

- The Proximal and Distal Stimuli 80
- Psychophysics 82
- From Physical Events to Mental Events 85

THE VISUAL SYSTEM 85

- The Human Eye 85
- The Pupil and The Lens 86
- The Retina 86
- Processes in the Brain 88
- Seeing Color 90

HEARING 93

- The Physics of Sound 93
- Psychological Dimensions of Sound 94
- The Physiology of Hearing 95

YOUR OTHER SENSES 98

- Smell 98
- Taste 99
- Touch and Skin Senses 100
- The Vestibular and Kinesthetic Senses 101
- Pain 101

ORGANIZATIONAL PROCESSES IN PERCEPTION 102

Psychology in Your Life: Does a Painful Break-Up Really Hurt? 103

- Attentional Processes 103
- Principles of Perceptual Grouping 104
- Spatial and Temporal Integration 105
- Motion Perception 106
- Depth Perception 106
- Perceptual Constancies 109
- Illusions 111

Critical Thinking in Your Life: Are Drivers Distracted When They Use Their Cell Phones? 113

IDENTIFICATION AND RECOGNITION PROCESSES 113

- Bottom-Up and Top-Down Processes 113
- The Influence of Contexts and Expectations 114
- Final Lessons 116
- Recapping Main Points 117
- Key Terms 117
- Practice Test 119

5 MIND, CONSCIOUSNESS, AND ALTERNATE STATES 120

THE CONTENTS OF CONSCIOUSNESS 121

- Awareness and Consciousness 121
- Studying the Contents of Consciousness 123

THE FUNCTIONS OF CONSCIOUSNESS 124

- The Uses of Consciousness 124
- Studying the Functions of Consciousness 125

SLEEP AND DREAMS 126

- Circadian Rhythms 126
- The Sleep Cycle 126
- Why Sleep? 128
- Sleep Disorders 129
- Dreams: Theater of the Mind 130

Psychology in Your Life: *Are You a Morning Type or an Evening Type?* 133

ALTERED STATES OF CONSCIOUSNESS 133

- Hypnosis 133
- Meditation 135

MIND-ALTERING DRUGS 136

- Dependence and Addiction 136
- Varieties of Psychoactive Drugs 137

Critical Thinking in Your Life: *What Can We Learn From “The Munchies”?* 138

- Recapping Main Points 141
- Key Terms 142
- Practice Test 143

6 LEARNING AND BEHAVIOR ANALYSIS 144

THE STUDY OF LEARNING 145

- What Is Learning? 145
- Behaviorism and Behavior Analysis 146

CLASSICAL CONDITIONING: LEARNING PREDICTABLE SIGNALS 147

- Pavlov’s Surprising Observation 147
- Processes of Conditioning 149
- Focus on Acquisition 151
- Applications of Classical Conditioning 153
- Biological Constraints 155

OPERANT CONDITIONING: LEARNING ABOUT CONSEQUENCES 156

Psychology in Your Life: *How Does Classical Conditioning Affect Cancer Treatment?* 157

- The Law of Effect 157
- Experimental Analysis of Behavior 158
- Reinforcement Contingencies 159
- Properties of Reinforcers 162

Critical Thinking in Your Life: *When Do “Time Outs” Change Children’s Behavior?* 163

- Schedules of Reinforcement 163
- Shaping 165
- Biological Constraints 166

COGNITIVE INFLUENCES ON LEARNING 167

- Comparative Cognition 167
- Observational Learning 168
- Recapping Main Points 170
- Key Terms 171
- Practice Test 172

7 MEMORY 173

WHAT IS MEMORY? 174

- Functions of Memory 174
- An Overview of Memory Processes 176

MEMORY USE FOR THE SHORT TERM 177

- Iconic Memory 177
- Short-Term Memory 178
- Working Memory 180

LONG-TERM MEMORY: ENCODING AND RETRIEVAL 182

- Retrieval Cues 182
- Context and Encoding 184
- The Processes of Encoding and Retrieval 187
- Why We Forget 188
- Improving Memory for Unstructured Information 189
- Metamemory 190

Critical Thinking in Your Life: How Can Memory Research Help You Prepare for Exams? 192

STRUCTURES IN LONG-TERM MEMORY 192

- Memory Structures 192
- Remembering as a Reconstructive Process 196

Psychology in Your Life: How Can You Benefit from the “Testing Effect”? 199

BIOLOGICAL ASPECTS OF MEMORY 200

- Searching for the Engram 200
- Memory Disorders 201
- Brain Imaging 202
- Recapping Main Points 204
- Key Terms 204
- Practice Test 205

8 COGNITIVE PROCESSES 206

STUDYING COGNITION 208

- Discovering the Processes of Mind 208
- Mental Processes and Mental Resources 208

LANGUAGE USE 210

- Language Production 211
- Language Understanding 214
- Language and Evolution 217
- Language, Thought, and Culture 218

Critical Thinking in Your Life: Why and How Do People Lie? 219

VISUAL COGNITION 220

PROBLEM SOLVING AND REASONING 223

- Problem Solving 223
- Deductive Reasoning 227

Psychology in Your Life: How Can You Become More Creative? 228

- Inductive Reasoning 229

JUDGMENT AND DECISION MAKING 230

- Heuristics and Judgment 230
- The Psychology of Decision Making 234
- Recapping Main Points 236
- Key Terms 237
- Practice Test 238

9 INTELLIGENCE AND INTELLIGENCE ASSESSMENT 239

WHAT IS ASSESSMENT? 240

- History of Assessment 240
- Basic Features of Formal Assessment 241

INTELLIGENCE ASSESSMENT 243

- The Origins of Intelligence Testing 243
- IQ Tests 244
- Extremes of Intelligence 245

Critical Thinking in Your Life: *Why Do Intelligent People Have Longer Lives?* 247

THEORIES OF INTELLIGENCE 248

- Psychometric Theories of Intelligence 248
- Sternberg's Triarchic Theory of Intelligence 248
- Gardner's Multiple Intelligences and Emotional Intelligence 249

THE POLITICS OF INTELLIGENCE 251

- The History of Group Comparisons 251
- Heredity and IQ 251
- Environments and IQ 253
- Culture and the Validity of IQ Tests 255

Psychology in Your Life: *What Brain Differences Accompany Higher Intelligence?* 257

ASSESSMENT AND SOCIETY 256

- Recapping Main Points 258
- Key Terms 258
- Practice Test 259

10 HUMAN DEVELOPMENT ACROSS THE LIFE SPAN 260

STUDYING DEVELOPMENT 261

PHYSICAL DEVELOPMENT ACROSS THE LIFE SPAN 263

- Prenatal and Childhood Development 263
- Physical Development in Adolescence 266
- Physical Changes in Adulthood 268

COGNITIVE DEVELOPMENT ACROSS THE LIFE SPAN 269

- Piaget's Insights into Mental Development 269
- Contemporary Perspectives on Early Cognitive Development 271
- Cognitive Development in Adulthood 273

ACQUIRING LANGUAGE 274

- Perceiving Speech and Perceiving Words 275
- Learning Word Meanings 276
- Acquiring Grammar 276

Psychology in Your Life: *What Happens When Children Become Bilingual?* 279

SOCIAL DEVELOPMENT ACROSS THE LIFE SPAN 278

- Erikson's Psychosocial Stages 278
- Social Development in Childhood 280
- Social Development in Adolescence 284

Critical Thinking in Your Life: *How Does Day Care Affect Children's Development?* 286

- Social Development in Adulthood 286

SEX AND GENDER DIFFERENCES 288

- Sex Differences 289
- Gender Identity and Gender Stereotypes 289

MORAL DEVELOPMENT 290

- Kohlberg's Stages of Moral Reasoning 291
- Gender and Cultural Perspectives on Moral Reasoning 292

LEARNING TO AGE SUCCESSFULLY 293

- Recapping Main Points 294
- Key Terms 295
- Practice Test 296

11 MOTIVATION 297

UNDERSTANDING MOTIVATION 298

- Functions of Motivational Concepts 298
- Sources of Motivation 299
- A Hierarchy of Needs 301

EATING 302

- The Physiology of Eating 302
- The Psychology of Eating 304

Psychology in Your Life: *How Does the Presence of Others Influence Your Eating?* 308

SEXUAL BEHAVIORS 307

- Nonhuman Sexual Behaviors 307
- Human Sexual Arousal and Response 309
- The Evolution of Sexual Behaviors 310
- Sexual Norms 312
- Homosexuality 313

MOTIVATION FOR PERSONAL

ACHIEVEMENT 315

- Need for Achievement 315
- Attributions for Success and Failure 316
- Work and Organizational Psychology 317

Critical Thinking in Your Life: *How Does Motivation Affect Academic Achievement?* 318

- Recapping Main Points 320
- Key Terms 320
- Practice Test 321

12 EMOTION, STRESS, AND HEALTH 322

EMOTIONS 323

- Basic Emotions and Culture 323
- Theories of Emotion 326
- The Impact of Mood and Emotions 330
- Subjective Well-Being 331

Psychology in Your Life: *Can You Accurately Predict Your Future Emotions?* 333

STRESS OF LIVING 332

- Physiological Stress Reactions 333
- Psychological Stress Reactions 336
- Coping with Stress 340
- Positive Effects of Stress 344

HEALTH PSYCHOLOGY 345

- The Biopsychosocial Model of Health 345
- Health Promotion 346

Critical Thinking in Your Life: *Can Health Psychology Help You Get More Exercise?* 348

- Treatment 348
- Personality and Health 351
- Job Burnout and the Health-Care System 352
- A Toast to Your Health 353
- Recapping Main Points 354
- Key Terms 354
- Practice Test 355

13 UNDERSTANDING HUMAN PERSONALITY 356

TRAIT PERSONALITY THEORIES 357

- Describing with Traits 357
- Traits and Heritability 360
- Do Traits Predict Behaviors? 360

Psychology in Your Life: *Do You Believe That Personality Can Change?* 362

- Evaluation of Trait Theories 362

PSYCHODYNAMIC THEORIES 363

- Freudian Psychoanalysis 363
- Evaluation of Freudian Theory 366
- Extending Psychodynamic Theories 367

HUMANISTIC THEORIES 368

- Features of Humanistic Theories 368
- Evaluation of Humanistic Theories 369

SOCIAL-LEARNING AND COGNITIVE THEORIES 370

- Rotter's Expectancy Theory 370
- Mischel's Cognitive-Affective Personality Theory 371
- Bandura's Cognitive Social-Learning Theory 372
- Evaluation of Social-Learning and Cognitive Theories 374

SELF THEORIES 374

- Self-Concepts and Self-Esteem 375
- The Cultural Construction of Self 376
- Evaluation of Self Theories 378

COMPARING PERSONALITY THEORIES 378

Critical Thinking in Your Life: *How Is Personality Conveyed in Cyberspace?* 379

ASSESSING PERSONALITY 379

- Objective Tests 380
- Projective Tests 381
- Recapping Main Points 382
- Key Terms 383
- Practice Test 384

14 PSYCHOLOGICAL DISORDERS 385

THE NATURE OF PSYCHOLOGICAL DISORDERS 386

- Deciding What Is Abnormal 386
- The Problem of Objectivity 387
- Classifying Psychological Disorders 388
- The Etiology of Psychopathology 390

ANXIETY DISORDERS 392

- Generalized Anxiety Disorder 392
- Panic Disorder 392
- Critical Thinking in Your Life:** *How Do Disorders Enter the DSM?* 393
- Phobias 393
- Obsessive-Compulsive Disorder 394
- Posttraumatic Stress Disorder 395
- Causes of Anxiety Disorders 395

MOOD DISORDERS 397

- Major Depressive Disorder 397
- Bipolar Disorder 398
- Causes of Mood Disorders 399
- Gender Differences in Depression 400
- Suicide 401

SOMATOFORM AND DISSOCIATIVE DISORDERS 402

- Somatoform Disorders 402
- Psychology in Your Life:** *How Can We Pinpoint Interactions of Nature and Nurture?* 403
- Dissociative Disorders 404

SCHIZOPHRENIC DISORDERS 406

- Major Types of Schizophrenia 407
- Causes of Schizophrenia 407

PERSONALITY DISORDERS 411

- Borderline Personality Disorder 411
- Antisocial Personality Disorder 412

PSYCHOLOGICAL DISORDERS OF CHILDHOOD 413

- Attention-Deficit Hyperactivity Disorder 413
- Autistic Disorder 414

THE STIGMA OF MENTAL ILLNESS 414

- Recapping Main Points 415
- Key Terms 416
- Practice Test 417

15 THERAPIES FOR PSYCHOLOGICAL DISORDERS 418

THE THERAPEUTIC CONTEXT 419

- Goals and Major Therapies 419
- Therapists and Therapeutic Settings 419
- Diversity Issues in Psychotherapy 421
- Historical Perspectives on Institutional Treatment 421

PSYCHODYNAMIC THERAPIES 422

- Freudian Psychoanalysis 423
- Later Psychodynamic Therapies 424
- Psychology in Your Life: Are Lives Haunted by Repressed Memories?* 425

BEHAVIOR THERAPIES 426

- Counterconditioning 426
- Contingency Management 428
- Generalization Techniques 430

COGNITIVE THERAPIES 430

- Changing False Beliefs 430
- Cognitive Behavioral Therapy 431

HUMANISTIC THERAPIES 432

- Client-Centered Therapy 433
- Gestalt Therapy 434

GROUP THERAPIES 434

- Couple and Family Therapy 435
- Community Support Groups 435

BIOMEDICAL THERAPIES 436

- Drug Therapy 436
- Psychosurgery 438
- ECT and rTMS 439

TREATMENT EVALUATION AND PREVENTION STRATEGIES 440

- Evaluating Therapeutic Effectiveness 440
- Common Factors 441
- Prevention Strategies 441

Critical Thinking in Your Life: Can Internet-Based Therapy Be Effective? 442

- Recapping Main Points 443
- Key Terms 444
- Practice Test 445

16 SOCIAL PSYCHOLOGY 446

CONSTRUCTING SOCIAL REALITY 447

- The Origins of Attribution Theory 448
- The Fundamental Attribution Error 448
- Self-Serving Biases 449
- Expectations and Self-Fulfilling Prophecies 450

THE POWER OF THE SITUATION 451

- Roles and Rules 451
- Social Norms 453
- Conformity 454
- Decision Making in Groups 457
- Obedience to Authority 458

ATTITUDES, ATTITUDE CHANGE, AND ACTION 460

- Attitudes and Behaviors 460
- Processes of Persuasion 461
- Persuasion by Your Own Actions 462
- Compliance 464

PREJUDICE 465

- Origins of Prejudice 466
- Effects of Stereotypes 466
- Implicit Prejudice 467
- Reversing Prejudice 468

SOCIAL RELATIONSHIPS 469

- Liking 469
- Loving 471

Psychology in Your Life: In What Ways Are You Like a Chameleon? 473

AGGRESSION, ALTRUISM, AND PROSOCIAL BEHAVIOR 473

- Individual Differences in Aggression 474
- Situational Influences on Aggression 474
- The Roots of Prosocial Behavior 476
- The Effects of the Situation on Prosocial Behavior 477

Critical Thinking in Your Life: How Can You Get People to Volunteer? 479

A PERSONAL ENDNOTE 479

- Recapping Main Points 480
- Key Terms 480
- Practice Test 481

Answer Appendix A-1

Glossary G-1

References R-1

Name Index N-1

Subject Index S-1

Credits C-1

Meet the Author



Richard J. Gerrig is a professor of psychology at Stony Brook University. Before joining the Stony Brook faculty, Gerrig taught at Yale University, where he was awarded the Lex Hixon Prize for teaching excellence in the social sciences. Gerrig's research on the cognitive psychological aspects of language use has been widely published. One line of work examines the mental processes that underlie efficient communication. A second research program considers the cognitive and emotional changes readers experience when they are transported to the worlds of stories. His book *Experiencing Narrative Worlds* was published by Yale University Press. Gerrig is a Fellow of the Society for Text & Discourse, the American Psychological Association, and the Association for Psychological Science. Gerrig is the proud father of Alexandra, who at age 21 provides substantial and valuable advice about many aspects of psychology and life. Life on Long Island is greatly enhanced by the guidance and support of Timothy Peterson.

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Preface

Teaching introductory psychology is one of the greatest challenges facing any academic psychologist. Indeed, because of the range of our subject matter, it is probably the most difficult course to teach effectively in all of academia. The course must cover both the micro-level analyses of nerve cell processes and the macro-level analyses of cultural systems: both the vitality of health psychology and the tragedy of lives blighted by mental illness. The challenge in writing this text—like the challenge in teaching—is to give form and substance to all this information, to bring it to life for your students.

More often than not, students come into the course filled with misconceptions about psychology that they have picked up from the infusion of “pop psychology” into our society. They also bring with them high expectations about what they want to get out of a course in psychology—they want to learn much that will be personally valuable, that will help them improve their everyday lives. Indeed, that is a tall order for any teacher to fill. But I believe that *Psychology and Life* can help you to fill it.

The goal has been to design a text that students will enjoy reading as they learn what is so exciting and special about the many fields of psychology. The goal for every chapter, in every sentence, has been to ensure that students will want to go on reading. At the same time, I have focused on how the text will work within the syllabi of instructors who value a research-centered, applications-relevant approach to psychology.

This 20th edition of *Psychology and Life* has only a single author, but it retains the vision reflected in the collaboration between Richard Gerrig and Philip Zimbardo. That partnership was forged because of a shared a commitment to teaching psychology as a science relevant to human welfare. Phil Zimbardo and I brought our teaching experience to bear on a text that balances scientific rigor with psychology’s relevance to contemporary life concerns. This latest edition continues the text’s tradition of bringing the most important psychological insights to bear on your students’ lives.

TEXT THEME: THE SCIENCE OF PSYCHOLOGY

The aim of *Psychology and Life* is to use solid scientific research to combat psychological misconceptions. In my experience as a teacher, one of the most reliable aspects of teaching introductory psychology is that students offer questions that are urgent for them:

My mother is taking Prozac: Will we learn what it does? Are you going to teach us how to study better?

I need to put my son in day care to come back to school. Is that going to be all right for him? What should I do if I have a friend talking about suicide?

It is comforting that each of these questions has been addressed by rigorous empirical research. *Psychology and Life* is devoted to providing students with scientific analyses of their foremost concerns. As a result, the features of *Psychology and Life* support a central theme: psychology as a science, with a focus on *applying* that science to your students’ lives.

Critical Thinking in Your Life

An important goal of *Psychology and Life* is to teach the scientific basis of psychological reasoning. When students ask questions, they quite often have acquired partial answers based on the types of information that are available in the popular media. Some of that information is accurate, but often students do not know how to make sense of it. How do they learn to interpret and evaluate what they hear in the media? How can they become wiser consumers of the overabundance of research studies and surveys cited? How can they judge the credibility of these sources? To counteract this infusion of so-called reliable research, this text provides students with the scientific tools to think critically about the information with which they are surrounded and to draw generalizations appropriate to the goals and methods of research.

A feature called **Critical Thinking in Your Life** seeks to confront students directly with the experimental basis of critical conclusions. The intention is not to maintain that each of these boxes has the definitive answer to a particular research area, but to invite critical thinking and open the door for further questions.

Critical Thinking in Your Life

DOES “COMFORT FOOD” REALLY GIVE COMFORT?

An important goal of *Psychology and Life* is to improve your ability to think critically. The text should help you “reach intelligent decisions about what [you] should believe and how [you] should act” (Aplsey, 2006, p. 61). To get started toward that goal, let’s consider a real-world scenario. You’re having a tough day, so you decide to indulge in some comfort food. Now take a step back. What evidence would you want to decide whether comfort food really makes you feel better? Let’s see how researchers have approached this question.

If comfort food really gives comfort, people should consume more while experiencing emotional distress. To test that hypothesis, a team of researchers asked college women to watch a “brutal and violent” film excerpt (Evers et al., 2010). The researchers intended the excerpt to produce negative emotions—and it did. However, some of the women were told to suppress their emotional responses while they watched, “so that anybody looking at them would not be able to determine what kind of excerpt they were watching” (p. 797). A second group was not asked to hide their feelings. After watching the film, the students believed they were starting an unrelated study on taste. They were given the opportunity to eat both comfort food (for example, chocolate) and non-comfort food (for example, unsalted crackers). The women who had suppressed their emotions ate twice as much comfort food as the other group; they ate just about the same amount of non-comfort food. This pattern suggests that people actually do prefer comfort food when they are experiencing emotional turmoil.

But why does comfort food help with negative emotions? Another pair of researchers suggested that, across our lives, we mostly eat comfort food in the company of loved ones (Frost & Gabriel, 2011). For that reason, we have associations built up in memory so that comfort food calls to mind the emotional warmth of those relationships. To test that hypothesis, the researchers assembled two groups of students: Some had previously reported that chicken soup was a comfort food; the second group did not have that association. At the start of the experiment, some students ate chicken soup and others did not. The students then completed a task in which they were given word fragments (for example, —) that could be completed as relationship words (for example, like). The researchers demonstrated that the students who consumed chicken soup—when it counted as a comfort food—produced the most relationship words. For that group, the experience of eating chicken soup made relationship associations easily accessible in memory.

These projects suggest that the memories associated with the consumption of comfort food help people deal with negative emotions. Now, use your critical thinking skills. What else would you like to know before you indulge in your own comfort food binge?

- In the first study, why might the researchers have kept their sample to just one sex?
- With respect to the researchers’ theory, why would chicken soup not be comfort food for everyone?

Critical Thinking in Your Life topics, by chapter:

- Chapter 1
NEW! Does “Comfort Food” Really Give Comfort?
- Chapter 2
Why Is Skill with Numbers Important?
- Chapter 3
NEW! How Does Culture Become “Embrained”?
- Chapter 4
Are Drivers Distracted When They Use Their Cell Phones?
- Chapter 5
What Can We Learn from “the Munchies”?
- Chapter 6
NEW! When Do “Time Outs” Change Children’s Behavior?
- Chapter 7
How Can Memory Research Help You Prepare for Exams?
- Chapter 8
Why and How Do People Lie?
- Chapter 9
NEW! Why Do Intelligent People Have Longer Lives?
- Chapter 10
How Does Day Care Affect Children’s Development?
- Chapter 11
How Does Motivation Affect Academic Achievement?
- Chapter 12
Can Health Psychology Help You Get More Exercise?
- Chapter 13
How Is Personality Conveyed in Cyberspace?
- Chapter 14
How Do Disorders Enter the *DSM*?
- Chapter 15
NEW! Can Internet-Based Therapies Be Effective?
- Chapter 16
How Can You Get People to Volunteer?

Psychology in Your Life

The questions I cited earlier are real questions from real students, and your students will find the answers throughout the book. These questions represent data collected from students over the years. The text uses the students’ own questions—what they’ve said they need to know about psychology—in the form of the popular **Psychology in Your Life** sections. The hope is that your students will see, in each instance, exactly why psychological knowledge is directly relevant to the decisions they make every day of their lives.

Psychology in Your Life topics, by chapter:

- Chapter 1
In What Ways Do Psychologists Participate in the Legal System?
- Chapter 2
NEW! Does Wishful Thinking Affect How You Evaluate Information?
- Chapter 3
How Does Your Brain Determine Trust?

Psychology in Your Life

IN WHAT WAYS DO PSYCHOLOGISTS PARTICIPATE IN THE LEGAL SYSTEM?

An important lesson of *Psychology and Life* is that empirical research provides psychologists with a broad range of expertise. As the text unfolds, you’ll have a good many opportunities to see how research results apply to important issues in everyday life. You’ll also see how psychological expertise functions in the public forum. As an initial example, let’s consider how forensic psychologists become involved in important legal decisions.

The legal system relies on forensic psychologists to provide assessments for both civil and criminal proceedings (Packer, 2008). On the civil side, for example, forensic psychologists provide evidence that influences decisions about child custody in divorce hearings. They might also testify about the potential psychological harm workers have sustained in a particular place of employment. On the criminal side, forensic psychologists evaluate people’s capacity to understand the acts they have committed and their competence to stand trial. Forensic psychologists also assess whether individuals are a danger to themselves or others. Let’s examine that last role more closely.

Suppose that a person is sent to prison for committing a violent crime. After having served some time, he or she arrives at a parole hearing. An important consideration at that hearing will be what lies in the prisoner’s future. What is the likelihood that violent acts will occur again?

In recent years, psychologists have attempted to provide increasingly research-based answers to that question (Fabian, 2006). This research often begins with a theoretical analysis

of the life factors that make violence more or less likely. Researchers make an important distinction between *static* and *dynamic* factors (Douglas & Skeem, 2008). Static factors are those that are relatively stable over time (such as gender and age at first conviction); dynamic variables are those that may change over time (such as emotional control and substance abuse). The inclusion of dynamic factors suggests how risk changes over time. Past history alone does not provide a valid indication of how a person will behave in the future. It’s also important to measure the trajectory of a person’s life.

Researchers must provide evidence that risk assessment devices are successful at predicting future violence (Singh et al., 2011; Yang et al., 2010). To do so, researchers often follow groups of individuals over time. For example, Wong and Gordon (2009) evaluated 918 adult male offenders who were incarcerated in the Canadian provinces of Alberta, Saskatchewan, and Manitoba. Each participant was evaluated with the Violence Risk Scale (VRS), which measures six static and 20 dynamic variables. To evaluate the validity of the VRS, the researchers followed their participants over several years, to see how often they were convicted of new crimes after they had been released into the community. In both the short term (after 1 year) and the longer term (after 4.4 years), men who had obtained higher ratings on the VRS were more likely to be convicted of additional violent crimes.

Research results of this sort are quite important because they help forensic psychologists provide more accurate guidance for legal judgments.

- Chapter 4
NEW! Does a Painful Break-up *Really* Hurt?
- Chapter 5
Are You a Morning Type or an Evening Type?
- Chapter 6
How Does Classical Conditioning Affect Cancer Treatment?
- Chapter 7
NEW! How Can You Benefit from the “Testing Effect”?
- Chapter 8
How Can You Become More Creative?
- Chapter 9
NEW! What Brain Differences Accompany Higher Intelligence?
- Chapter 10
NEW! What Happens When Children Become Bilingual?
- Chapter 11
How Does the Presence of Others Influence Your Eating?
- Chapter 12
Can You Accurately Predict Your Future Emotions?
- Chapter 13
NEW! Do You Believe That Personality Can Change?
- Chapter 14
How Can We Pinpoint Interactions of Nature and Nurture?
- Chapter 15
Are Lives Haunted by Repressed Memories?
- Chapter 16
In What Ways Are You Like a Chameleon?

Featured Studies

These major studies showcase the *how* and *why* behind key psychological research. These studies have been integrated into the text itself, allowing students to understand their full impact within the context of their reading. Example topics include plasticity in the visual cortex of adult rats, the impact of meditation

on brain structure, the impact of culture on judgments of which category members are typical, the impact of emotional arousal on memory, self-handicapping in academic contexts, family therapy for children's anxiety disorders, cross-cultural differences in cognitive dissonance, and consequences of implicit prejudice. Many of the nearly 120 featured studies throughout the text are new or have been revised for this edition.

Pedagogical Features

Psychology and Life has maintained a reputation for presenting the science of psychology in a way that is challenging, yet accessible, to a broad range of students, and the 20th edition is no exception. To enhance students' experience, the book includes several pedagogical features:

- **Stop and Review.** This feature appears at the end of every major section and provides students with thought-provoking questions to test their mastery of material before moving on. Answers to these questions can be found in the Answer Appendix at the back of the book.
- **Recapping Main Points.** Each chapter concludes with a chapter summary, *Recapping Main Points*, which summarizes the chapter content and is organized according to major section headings.
- **Key Terms.** Key terms are boldfaced in the text as they appear with their definitions at the bottom of each page and are listed, with page references, at the end of each chapter for quick review.
- **Practice Test.** Each chapter concludes with a practice test with 15 multiple-choice questions based on the material in both the main text and the boxes. In addition, the practice test provides sample essay questions that allow students to think more broadly about the content of each chapter. Multiple-choice answers can be found in the Answer Appendix.
- **MyPsychLab Resources.** Throughout the chapters, valuable video clips, audio files, and simulations are referred to that will help you understand the concepts in each chapter. In the eText, they are hyperlinked to take you directly to the resource in MyPsychLab.

NEW IN THE 20TH EDITION

Selected Chapter-by-Chapter Changes

Chapter 1

- New Critical Thinking in Your Life: Does “Comfort Food” Really Give Comfort?
- Updated discussion of structuralism and functionalism.
- Updated figures on distributions of degrees and work settings for psychologists.

Chapter 2

- New Psychology in Your Life: Does Wishful Thinking Affect How You Evaluate Information?
- Updated Critical Thinking in Your Life: Why Is Skill with Numbers Important?

- Updated example of the process of research: “Language style matching predicts relationship initiation and stability” (Ireland et al., 2011)
- New featured studies:
 - “The invisible benefits of exercise” (Ruby et al., 2011)
 - “Media use and child sleep: The impact of content, timing, and environment” (Garrison et al., 2011)
 - “Birds of a feather sit together: Physical similarity predicts seating choice” (Mackinnon et al., 2011)

Chapter 3

- New Critical Thinking in Your Life: How Does Culture Become “Embrained”?
- New section on the interaction of genes and environments
- New discussion of mirror neurons
- Expanded discussion of H. M.
- New featured studies:
 - “A genetic analysis of coffee consumption in a sample of Dutch twins” (Vink et al., 2009)
 - “Children's genotypes interact with maternal responsive care in predicting children's competence: Diathesis-stress or differential susceptibility?” (Kochanska et al., 2011)
 - “Attention and memory in aged rats: Impact of lifelong environmental enrichment” (Harati et al., 2011)

Chapter 4

- New Psychology in Your Life: Does a Painful Break-up Really Hurt?
- New research study: “Differential neuronal responses to the self and others in the extrastriate body area (EBA) and the fusiform body area” (Vocks et al., 2010)
- New figure and discussion of the thalamus and lateral geniculate nucleus

Chapter 5

- Revised section on unattended information
- Update on paradoxical insomnia
- Update on properties of dreams
- New featured studies:
 - “Sleep selectively enhances memory expected to be of future relevance” (Wilhelm et al., 2011)
 - “Effect of hypnosis on pain and blink reflexes in patients with painful temporomandibular disorders” (Abrahamsen et al., 2011)
 - “Impact of mindfulness-based stress reduction training on intrinsic brain connectivity” (Kilpatrick et al., 2011)

Chapter 6

- New Critical Thinking in Your Life: When Do “Time Outs” Change Children's Behavior?
- Updated research added to Psychology in Your Life: How Does Classical Conditioning Affect Cancer Treatment?
- Biological constraints integrated into sections on classical and operant conditioning
- New featured studies:
 - “Interactions of temperatures and taste in conditioned aversions” (Smith et al., 2010)
 - “Testing pigeon memory in a change detection task” (Wright et al., 2010)

Chapter 7

- New Psychology in Your Life: How Can You Benefit from the “Testing Effect”?
- New research on working memory capacity (Kleider et al., 2010; Sörqvist et al., 2010)
- Revised section on processes and implicit memory with updated research (Eich & Metcalfe, 2009)
- New material on judgments of learning
- Revised discussion of Alzheimer’s disease
- New featured studies:
 - “Writing about testing worries boosts exam performance in the classroom” (Ramirez & Beilock, 2011)
 - “Long-term conceptual implicit memory: A decade of evidence” (Thomson et al., 2010)
 - “Combating co-witness contamination: Attempting to decrease the negative effects of discussion on eye-witness memory” (Paterson et al., 2011)
 - “Faces are special but not too special: Spared face recognition in amnesia is based on familiarity” (Aly et al., 2010)

Chapter 8

- Updated research in Critical Thinking in Your Life: Why and How Do People Lie?
- New discussion of the Pirahã people with respect to language and thought
- New research on the belief-bias effect (Dube et al., 2010)
- Section on creativity moved to this chapter
- New research on the anchoring heuristic (Adaval & Wyer, 2011)
- New featured studies:
 - “Attenuating information in spoken communication: For the speaker, or for the addressee?” (Galati & Brennan, 2010)
 - “Who dunnit? Cross-linguistic differences in eye-witness memory” (Fausey & Boroditsky, 2011)
 - “Ending on a high note: Adding a better end to effortful study” (Finn, 2010)
 - “Ventral striatal signal changes represent missed opportunities and predict future choice” (Büchel et al., 2011)

Chapter 9

- New Critical Thinking in Your Life: Why Do Intelligent People Have Longer Lives?
- New Psychology in Your Life: What Brain Differences Accompany Higher Intelligence?
- Updated information on intellectual disabilities
- Critiques of Sternberg’s and Gardner’s theories of intelligence
- New research on interactions of genetics and environment (Tucker-Drob et al., 2011)
- New research on assessment of early childhood interventions (Lee, 2011; Zhai et al., 2011)
- New featured studies:
 - “The practical intelligence of entrepreneurs: Antecedents and a link with new venture growth” (Baum et al., 2011).
 - “Trait emotional intelligence in sports: A protective role against stress through heart rate variability?” (Laborde et al., 2011)

Chapter 10

- New Psychology in Your Life: What Happens When Children Become Bilingual?
- Updated research in Critical Thinking in Your Life: How Does Day Care Affect Children’s Development?
- Discussion of ethical concerns for developmental research
- Discussion of critical periods versus sensitive periods
- Discussion of the cephalocaudal and proximodistal principles
- New research on infant cognition (Jowkar-Baniani & Schmuckler, 2011; Newman et al., 2010)
- New section on theory of mind
- New research on the long-term impact of infant temperament (Degnan et al., 2011).
- New discussion of Marcia’s concept of identity status
- Revised discussion of prenatal hormones and sex differences
- New research on gender differences in moral reasoning (Mercadillo et al., 2011; You et al., 2011)
- New featured studies:
 - “The association between computer use and cognition across adulthood: Use it so you won’t lose it?” (Tun & Lachman, 2010)
 - “The association between parenting and attachment security is moderated by a polymorphism of the mineralocorticoid receptor gene: Evidence for differential susceptibility” (Luijk et al., 2011)
 - “The effect of passengers and risk-taking friends on risky driving and crashes/near crashes among novice teenagers” (Simons-Morton et al., 2011)
 - “Establishing the next generation at work: Leader generativity as a moderator of the relationship between leader age, leader-member exchange, and leadership success” (Zacher et al., 2011)
 - “Gender differences in the neural correlates of humor processing: Implications for different processing modes” (Kohn et al., 2011)

Chapter 11

- Updated research in Critical Thinking in Your Life: How Does Motivation Affect Academic Achievement?
- Revised discussion of hormones and the regulation of eating
- Updated discussion on obesity, including interactions of genes and environment that may predispose some individuals to obesity (Gautron & Elmquist, 2011)
- Revised discussion of racial differences in body dissatisfaction
- New research on power and cheating in relationships (Lammers et al., 2011)
- New research on sexual norms in the United States
- New research on the consequences of need for achievement
- New featured studies:
 - “Getting a bigger slice of the pie. Effects on eating and emotion in restrained and unrestrained eaters” (Polivy et al., 2010)
 - “Sperm competition risk affects male mate choice copying” (Bierbach et al., 2011)
 - “Mating interest improves women’s accuracy in judging male sexual orientation” (Rule et al., 2011)

Chapter 12

- Expanded section on culture and facial expressions
- Revised section on culture and emotional expression
- Revised section on the impact of moods and emotions
- New research examining the long-term impact of 9/11/01 (DiGrande et al., 2011)
- Revised discussion of the impact of socioeconomic factors on physical psychological health
- Revised discussion of psychoneuroimmunology
- New research on an intervention for Type A behavior (Wright et al., 2011)
- New featured studies:
 - “The weapon focus effect on memory for female versus male perpetrators” (Pickel, 2009)
 - “The development and initial validation of a brief daily hassles scale suitable for use with adolescents” (Wright et al., 2010)
 - “Preventing children’s stress after disaster with teacher-based intervention: A controlled study” (Wolmer et al., 2011)
 - “Spousal support and changes in distress over time in couples coping with cancer: The role of personal control” (Dagan et al., 2011)
 - “Benefit finding, affective reactions to diabetes stress, and diabetes management among early adolescents” (Tran et al., 2011)
 - “Patient and physician beliefs about control over health: Association of symmetrical beliefs with medication regimen” (Christensen et al., 2010)

Chapter 13

- New Psychology in Your Life: Do You Believe That Personality Can Change?
- New discussion of Carl Rogers’s view of the self
- New discussion of terror management theory
- New featured studies:
 - “Sources of cumulative continuity in personality: A longitudinal multiple-rater twin study” (Kandler et al., 2010)
 - “What it pays to know about a close other: The value of if-then personality knowledge in close relationships” (Friesen & Kammrath, 2011)
 - “The effects of self-efficacy on academic success of first-generation college sophomore students” (Vuong et al., 2010)
 - “Culturally divergent responses to mortality salience” (Ma-Kellams & Blascovich, 2011)

Chapter 14

- Updated research added to Psychology in Your Life: How Can We Pinpoint Interactions of Nature and Nurture?
- New research on the prevalence of PTSD (DiGrande et al., 2011; Fan et al., 2011)
- New research on cognitive biases and anxiety disorders (Taylor et al., 2010)
- Revised discussion of behavioral approaches to mood disorders
- New research on adolescent sexuality and suicide (Marshall et al., 2011)
- Revised section on the stigma of mental illness

- New featured studies:
 - “The moderational role of anxiety sensitivity in flight phobia” (Vanden Bogaerde & De Raedt, 2011)
 - “Motor inhibition in hysterical conversion disorder” (Cojan et al., 2010)
 - “The rejection-rage contingency in borderline personality disorder” (Berenson et al., 2011)
 - “The relationship of multiple aspects of stigma and personal contact with someone hospitalized for mental illness, in a nationally representative sample” (Boyd et al., 2010)

Chapter 15

- New Critical Thinking in Your Life: Can Internet-Based Therapies Be Effective?
- Revised discussion of diversity issues in psychotherapy
- Revised discussion of mental illness and homelessness
- Excerpts from transcripts of psychodynamic, cognitive behavioral, and client-centered therapy
- Updated information on drug therapies and ECT
- New section on common factors in psychotherapy, including a discussion of the therapeutic alliance
- New discussion of community psychology
- New featured studies:
 - “Treating cockroach phobia with augmented reality” (Botella et al., 2010)
 - “Amount of earnings during prize contingency management treatment is associated with posttreatment abstinence outcomes” (Petry & Roll, 2011)
 - “Mothers and fathers in family cognitive-behavioral therapy for anxious youth” (Podell & Kendall, 2011)

Chapter 16

- New research on culture and self-serving biases (Imada & Ellsworth, 2011)
- Revised discussion of conformity in everyday life
- New discussion of jigsaw classrooms
- New discussion of evolutionary analyses of facial attractiveness
- New research on culture and love (Riela et al., 2010)
- Reassessment of the facts of Kitty Genovese’s murder and expanded discussion of contemporary research on bystander intervention
- New featured studies:
 - “They say a triple lutz: Bias and perception in American and Russian newspaper coverage of the 2002 Olympic figure skating scandal” (Stepanova et al., 2009)
 - “Self-verification as a mediator of mothers’ self-fulfilling effects on adolescents’ educational attainment” (Scherr et al., 2011)
 - “Why do people get phished? Testing individual differences in phishing vulnerability within an integrated information processing model” (Vishwanath et al., 2011)
 - “I hope I’m not disturbing you, am I? Another operationalization of the foot-in-the-mouth paradigm” (Meineri & Guéguen, 2011).
 - “We must not be enemies: Interracial contact and the reduction of prejudice among authoritarians” (Dhont & Van Hiel, 2009)

- “What is beautiful is good because what is beautiful is desired: Physical attractiveness stereotyping as projection of personal goals” (Lemay et al., 2010)
- “This is your brain on violent video games: Neural desensitization to violence predicts increased aggression following violent video game exposure” (Engelhardt et al., 2011)

THE *PSYCHOLOGY AND LIFE* TEACHING AND LEARNING PROGRAM

A good textbook is only one part of the package of educational materials that makes an introductory psychology course valuable for students and effective for instructors. A number of valuable ancillary materials in both electronic and print form will make the difficult task of teaching introductory psychology easier for you and more interesting for your students.

The **Instructor’s Manual (IM)**, authored by David Ward (Arkansas Tech University), gives you unparalleled access to a huge selection of classroom-proven assets. Each chapter offers integrated teaching outlines to help instructors seamlessly incorporate all the ancillary materials for this book into their lectures. Instructors will also find an extensive bank of lecture launchers, handouts, activities, crossword puzzles, suggestions for integrating third-party videos and web resources, and cross-references to the hundreds of multimedia and video assets found in the MyPsychLab course. The Instructor Manual is available for download from the Instructor’s Resource Center at <http://www.pearsonhighered.com/irc> or from the Instructor’s DVD (ISBN 0-205-89877-7).

The **Test Bank**, authored by Jason Spiegelman (Community College of Baltimore County) contains, for each chapter, **multiple-choice** questions, some of which address myths or factoids from the text, along with **true/false** questions and **fill-in-the-blank** questions. Each conceptual and applied multiple-choice question has an answer justification, and all questions include a page reference, a difficulty rating (easy/medium/difficult), and skill type (conceptual/factual/applied). **Essay** questions which deal specifically with critical-thinking skills, have also been included, along with sample answers for each. The TIF is available for download from the Instructor’s Resource Center at <http://www.pearsonhighered.com/irc> or from the Instructor’s DVD (ISBN 0-205-89877-7).



The test bank is available in a computerized format called **Pearson MyTest**. It is a powerful assessment generation program that helps instructors easily create and print quizzes and exams. Questions and tests can be authored online, allowing instructors ultimate flexibility and the ability to efficiently manage assessments anytime, anywhere. Instructors can easily access

existing questions, and edit, create, and store using simple drag-and-drop and Word-like controls. Data on each question provide information on difficulty level and page number. For more information, go to <http://www.PearsonMyTest.com>.

Power Point Presentations: Pearson is pleased to offer a unique and comprehensive collection of PowerPoint presentations, prepared by Christopher T. Arra (Northern Virginia Community College) for use in your classroom. The PowerPoints are available for download at the Instructor’s Resource Center (<http://www.pearsoned.com/IRC>) or on the Instructor’s Resource DVD (ISBN 0-205-89877-7). **Instructors can choose from a PowerPoint lecture presentation** that highlights major topics from the chapter, pairing them with select art images, or a **PowerPoint collection of the complete art files** from the text. Finally, Pearson has developed a set of **Interactive PowerPoints** (available only on the Instructor’s Resource DVD) with embedded animations, videos, and activities. Many of the slides include layered art, allowing instructors the ability to highlight specific aspects of a figure, such as identifying each part of the brain.

Instructor’s DVD (ISBN 0-205-89877-7): Bringing all of the 20th edition’s instructor resources together in one place, the Instructor’s Resource DVD offers all versions of the PowerPoint presentations, the electronic files for the Instructor’s Manual materials, and the Test Bank to help you customize your lecture notes. (Note that these resources can also be downloaded from the Instructor Resource Center online by following the directions at <http://www.pearsonhighered.com/irc>.)

Online Options for Instructors and Students

MyPsychLab for *Psychology and Life*, 20th Edition

MyPsychLab

Personalize Learning with MyPsychLab

- The **new MyPsychLab** delivers proven results in helping students succeed, provides engaging experiences that personalize learning, and comes from a trusted partner with educational expertise and a deep commitment to helping students and instructors achieve their goals.
- The **new Experiments Tool** within MyPsychLab allows students to experience psychology by participating in key experiments, inventories, and surveys. All experiments in the Tool collect data, providing instructors with a valuable tool for illustrating the science behind core psychological concepts in their classroom.
- The **Pearson eText** lets students access their textbook anytime, anywhere, and in any way they want—including listening online or downloading to an iPad.
- A **personalized study plan** for each student, based on Bloom’s Taxonomy, arranges content from less complex thinking—such as remembering and understanding—to more complex critical thinking—such as applying and analyzing. This layered approach promotes better critical-thinking skills and helps students succeed in the course and beyond.
- **Assessment** tied to every video, application, and chapter enables both instructors and students to track progress and get immediate feedback. With results feeding into

a powerful grade book, the assessment program helps instructors identify student challenges early—and find the best resources with which to help students.

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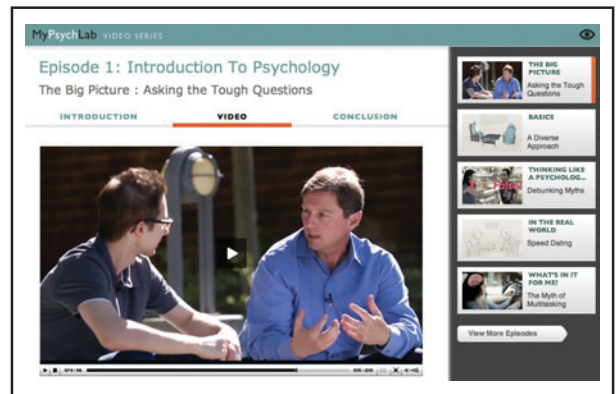
MyPsychLab for BlackBoard and MyPsychLab for WebCT: The customized BlackBoard cartridge and WebCT epack include the complete Test Item File, chapter Learning Objectives, Glossary Flashcards, Chapter Summaries, a link to MyPsychLab, and Chapter Exams. Ask your Pearson representative about custom offerings for other learning management systems.

New MyPsychLab Video Series

This new video series offers instructors and students the most current and cutting-edge introductory psychology video content available anywhere. These exclusive videos take the viewer into today's research laboratories, inside the body and brain through breathtaking animations, and out into the street for real-world applications. Guided by the Design, Development, and Review team, a diverse group of introductory psychology professors, this comprehensive new series features 17 half-hour episodes organized around the major topics of the introductory psychology course syllabus. The MyPsychLab video series was designed with flexibility in mind. Each half-hour episode in the MyPsychLab video series is made up of several five-minute clips that can be viewed separately or together:

- *The Big Picture* introduces the topic of the episode and draws in the viewer.
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- *Thinking Like a Psychologist* models critical thinking and explores research methods.
- *In the Real World* focuses on applications of psychological research.
- *What's in It for Me?* These clips show students the relevance of psychological research to their lives.

Students can access the videos anytime within MyPsychLab, and each clip is accompanied by enriching self-assessment quizzes. Instructors can access the videos for classroom presentation in MyPsychLab or on DVD.



ACCESSING ALL RESOURCES

For a list of all student resources available with *Psychology and Life*, go to www.mypearsonstore.com, enter the text ISBN (0-205-85913-5), and check out the “Everything That Goes with It” section under the book cover.

For access to all instructor supplements for Gerrig, *Psychology and Life*, simply go to <http://pearsonhighered.com/irc> and follow the directions to register (or log in if you already have a Pearson user name and password).

Once you have registered and your status as an instructor is verified, you will be e-mailed a login name and password. Use your login name and password to gain access to the catalogue. Click on the “online catalogue” link, click on “psychology” followed by “introductory psychology” and then the Gerrig, *Psychology and Life* text. Under the description of each supplement is a link that allows you to download and save the supplement to your desktop.

For technical support for any of your Pearson products, you and your students can contact <http://247.pearsoned.com>.

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Psychology and Life

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Psychology and Life

WHAT MAKES PSYCHOLOGY UNIQUE? 2

Definitions • The Goals of Psychology

Critical Thinking in Your Life 6

Does “Comfort Food” Really Give Comfort?

THE EVOLUTION OF MODERN PSYCHOLOGY 5

Psychology’s Historical Foundations • Women as Pioneering Researchers • Perspectives on Psychology

WHAT PSYCHOLOGISTS DO 14

Psychology in Your Life 16


In What Ways Do Psychologists Participate in the Legal System?

HOW TO USE THIS TEXT 16

Study Strategies • Study Techniques


RECAPPING MAIN POINTS 17



Why should you study psychology? The answer to that question is quite straightforward. Psychological research has immediate and crucial applications to important issues of everyday experience: your physical and mental health, your ability to form and sustain close relationships, and your capacity for learning and personal growth. One of the foremost goals of *Psychology and Life* is to highlight the personal relevance and social significance of psychological expertise. 

Every semester when I begin to teach, I am faced with students who enter an introductory psychology class with some very specific questions in mind. Sometimes those questions emerge from their own experience (“What should I do if I think my mother is mentally ill?” “Will this course teach me how to improve my grades?”); sometimes those questions emerge from the type of psychological information that is communicated through the media (“Should I worry when people use cell phones while they’re driving?” “Is it possible to tell when people are lying?”) The challenge of introductory psychology is to bring the products of scientific research to bear on questions that matter to you.

Research in psychology provides a continuous stream of new information about the basic mechanisms that govern mental and behavioral processes. As new ideas replace or modify old ideas, psychologists are continually intrigued and challenged by the many fascinating pieces of the puzzle of human nature. I hope that, by the end of this journey through psychology, you too will cherish your store of psychological knowledge.

Foremost in the journey will be a scientific quest for understanding. We will inquire about the how, what, when, and why of human behavior and about the causes and consequences of behaviors you observe in yourself, in other people, and in animals. We will consider why you think, feel, and behave as you do. What makes you uniquely different from all other people? Yet why do you often behave so much like others? Are you molded by heredity, or are you shaped more by personal experiences? How can aggression and altruism, love and hate, and mental illness and creativity exist side by side in this complex creature—the human animal? In this opening chapter, we ponder how and why all these types of questions have become relevant to psychology’s goals as a discipline. 

WHAT MAKES PSYCHOLOGY UNIQUE?

To appreciate the uniqueness and unity of psychology, you must consider the way psychologists define the field and the goals they bring to their research and applications. By the end of the text, I hope you will think like a psychologist. This first section will give you a strong idea of what that might mean.

Definitions

Many psychologists seek answers to this fundamental question: What is human nature? Psychology answers this question by looking at processes that occur within individuals as well as forces that arise within the physical and social environment. In this light, we’ll define **psychology** as the scientific study of

the behavior of individuals and their mental processes. Let’s explore the critical parts of this definition: *scientific*, *behavior*, *individual*, and *mental*.

The scientific aspect of psychology requires that psychological conclusions be based on evidence collected according to the principles of the scientific method. The **scientific method** consists of a set of orderly steps used to analyze and solve problems. This method uses objectively collected information as the factual basis for drawing conclusions. Chapter 2 will elaborate on the features of the scientific method more fully as we consider how psychologists conduct their research.

Behavior is the means by which organisms adjust to their environment. Behavior is action. The subject matter of psychology largely consists of the observable behavior of humans and other species of animals. Smiling, crying, running, hitting, talking, and touching are some obvious examples of behavior you can observe. Psychologists examine what the individual does and how the individual goes about doing it within a given behavioral setting and in the broader social or cultural context.

The subject of psychological analysis is most often an *individual*—a newborn infant, a college student adjusting to life in a dormitory, or a woman coping with the stress of her husband’s deterioration from Alzheimer’s disease. However, the subject might also be a chimpanzee learning to use symbols to communicate, a white rat navigating a maze, or a sea slug responding to a danger signal. An individual might be studied in its natural habitat or in the controlled conditions of a research laboratory.

Many researchers in psychology also recognize that they cannot understand human actions without also understanding *mental processes*, the workings of the human mind. Much human activity takes place as private, internal events—thinking, planning, reasoning, creating, and dreaming. Many psychologists believe that mental processes represent the most important aspect of psychological inquiry. As you shall soon see, psychological investigators have devised ingenious techniques to study mental events and processes—to make these private experiences public.

The combination of these concerns defines psychology as a unique field. Within the *social sciences*, psychologists focus largely on the behavior of individuals in various settings, whereas sociologists study social behavior of groups or institutions, and anthropologists focus on the broader context of behavior in different cultures. Even so, psychologists draw broadly from the insights of other scholars. Psychologists share many interests with researchers in *biological sciences*, especially with those who study brain processes and the biochemical bases of behavior. As part of *cognitive science*,

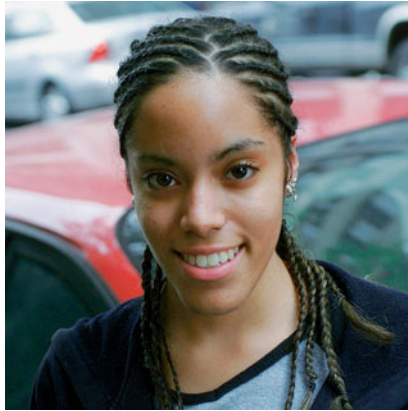
 **Watch the Video** *The Big Picture: Asking the Tough Questions on MyPsychLab*

 **Watch the Video** *How Much Do You Know About Psychology? on MyPsychLab*

psychology The scientific study of the behavior of individuals and their mental processes.

scientific method The set of procedures used for gathering and interpreting objective information in a way that minimizes error and yields dependable generalizations.


behavior The actions by which an organism adjusts to its environment.



Most psychological study focuses on individuals—usually human ones, but sometimes those of other species. Is there anything happening in your life that might make you want to conduct a research study?



psychologists' questions about how the human mind works are related to research and theory in computer science, philosophy, linguistics, and neuroscience. As a *health science*—with links to medicine, education, law, and environmental studies—psychology seeks to improve the quality of each individual's and the collective's well-being.

Although the remarkable breadth and depth of modern psychology are a source of delight to those who become psychologists, these same attributes make the field a challenge to the student exploring it for the first time. There is so much more to the study of psychology than you might expect initially—and, because of that, there will also be much of value that you can take away from this introduction to psychology. The best way to learn about the field is to learn to share psychologists' goals. Let's consider those goals. 

The Goals of Psychology


The goals of the psychologist conducting basic research are to describe, explain, predict, and control behavior. These goals form the basis of the psychological enterprise. What is involved in trying to achieve each of them?

Describing What Happens The first task in psychology is to make accurate observations about behavior. Psychologists typically refer to such observations as their *data* (*data* is the plural, *datum* the singular). **Behavioral data** are reports of observations about the behavior of organisms and the conditions

under which the behavior occurs. When researchers undertake data collection, they must choose an appropriate *level of analysis* and devise measures of behavior that ensure *objectivity*.

To investigate an individual's behavior, researchers may use different *levels of analysis*—from the broadest, most global level down to the most minute, specific level. Suppose, for example, you were trying to describe a painting you saw at a museum (see **Figure 1.1** on page 4). At a global level, you might describe it by title, *Bathers*, and by artist, Georges Seurat. At a more specific level, you might recount features of the painting: Some people are sunning themselves on a riverbank while others are enjoying the water, and so on. At a very specific level, you might describe the technique Seurat used—tiny points of paint—to create the scene. The description at each level would answer different questions about the painting.

Different levels of psychological description also address different questions. At the broadest level of psychological analysis, researchers investigate the behavior of the whole person within complex social and cultural contexts. At this level, researchers might study cross-cultural differences in violence, the origins of prejudice, and the consequences of mental illness. At the next level, psychologists focus on

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behavioral data Observational reports about the behavior of organisms and the conditions under which the behavior occurs or changes.



FIGURE 1.1 Levels of Analysis

Suppose you wanted a friend to meet you in front of this painting. How would you describe it? Suppose your friend wanted to make an exact copy of the painting. How would you describe it?

narrower, finer units of behavior, such as speed of reaction to a stop light, eye movements during reading, and children’s grammatical errors while acquiring language. Researchers can study even smaller units of behavior. They might work to discover the biological bases of behavior by identifying the places in the brain where different types of memories are stored, the biochemical changes that occur during learning, and the sensory paths responsible for vision or hearing. Each level of analysis yields information essential to the final composite portrait of human nature that psychologists hope ultimately to develop.

However tight or broad the focus of the observation, psychologists strive to describe behavior *objectively*. Collecting the facts as they exist, and not as the researcher expects or hopes them to be, is of utmost importance. Because every observer brings to each observation his or her *subjective* point of view—biases, prejudices, and expectations—it is essential to prevent these personal factors from creeping in and distorting the data. As you will see in the next chapter, psychological researchers have developed a variety of techniques to maintain objectivity.

Explaining What Happens Whereas *descriptions* must stick to perceivable information, *explanations* deliberately go beyond what can be observed. In many areas of psychology, the central goal is to find regular patterns in behavioral and mental processes. Psychologists want to discover *how* behavior works. Why do you laugh at situations that differ from your expectations of what is coming next? What conditions could lead someone to attempt suicide or commit rape?

Explanations in psychology usually recognize that most behavior is influenced by a combination of factors. Some factors operate within the individual, such as genetic makeup, motivation, intelligence level, or self-esteem. These inner determinants tell something special about the organism. Other factors, however, operate externally. Suppose, for example, that a child tries to please a teacher to win a prize or that a motorist trapped in a traffic jam becomes frustrated and hostile. These behaviors are largely influenced by events outside the person. When psychologists seek to explain behavior, they almost

always consider both types of explanations. Suppose, for example, psychologists want to explain why some people start smoking. Researchers might examine the possibility that some individuals are particularly prone to risk taking (an internal explanation) or that some individuals experience a lot of peer pressure (an external explanation)—or that both a disposition toward risk taking and situational peer pressure are necessary (a combined explanation).

Often a psychologist’s goal is to explain a wide variety of behavior in terms of one underlying cause. Consider a situation in which your professor says that, to earn a good grade, each student must participate regularly in class discussions. Your roommate, who is always well prepared for class, never raises his hand to answer questions or volunteer information. Your professor chides him for being unmotivated and assumes he is not bright. That same roommate also goes to parties but speaks only to people he knows, doesn’t openly defend his point of view when it is challenged by someone less informed, and rarely engages in small talk at the dinner table. What is your analysis? What underlying cause might account for this range of behavior? How about *shyness*? Like many other people who suffer from intense feelings of shyness, your roommate is unable to behave in desired ways (Zimbardo & Radl, 1999). We can use the concept of shyness to explain the full pattern of your roommate’s behavior.

To forge such causal explanations, researchers must often engage in a creative process of examining a diverse collection of data. Master detective Sherlock Holmes drew shrewd conclusions from scraps of evidence. In a similar fashion, every researcher must use an informed imagination, which creatively *synthesizes* what is known and what is not yet known. A well-trained psychologist can explain observations by using her or his insight into the human experience along with the facts previous researchers have uncovered about the phenomenon in question. Much psychological research is an attempt to give accurate explanations for different behavioral patterns.

Predicting What Will Happen Predictions in psychology are statements about the likelihood that a certain behavior will occur or that a given relationship will be found. Often an accurate explanation of the causes underlying some form of behavior will allow a researcher to make accurate predictions about future behavior. Thus, if we believe your roommate to be shy, we could confidently predict that he would be uncomfortable when asked to give a speech in front of a large class. When different explanations are put forward to account for some behavior or relationship, they are usually judged by how well they can make accurate and comprehensive predictions. If your roommate was to speak happily to the class, we would be forced to rethink our diagnosis.

Just as observations must be made objectively, scientific predictions must be worded precisely enough to enable them to be tested and then rejected if the evidence does not support them. Suppose, for example, a researcher predicts that the presence of a stranger will reliably cause human and monkey babies, beyond a certain age, to respond with signs of anxiety. We might want to bring more precision to this prediction by examining the dimension of “stranger.” Would fewer signs of anxiety appear in a human or a monkey baby if the stranger were also a baby rather than an adult, or if the stranger were of the same species rather than of a different one? To improve future predictions, a researcher would create systematic variations in environmental conditions and observe their influence on the baby’s response.



A psychological prediction.

Controlling What Happens For many psychologists, control is the central, most powerful goal. Control means making behavior happen or not happen—starting it, maintaining it, stopping it, and influencing its form, strength, or rate of occurrence. A causal explanation of behavior is convincing if it can create conditions under which the behavior can be controlled.

The ability to control behavior is important because it gives psychologists ways of helping people improve the quality of their lives. Throughout *Psychology and Life*, you will see examples of the types of *interventions* psychologists have devised to help people gain control over problematic aspects of their lives. Chapter 15, for example, discusses treatments for mental illness. You will see how people can harness psychological forces to eliminate unhealthy behaviors like smoking and initiate healthy behaviors like regular exercise (see Chapter 12).



What causes people to smoke? Can psychologists create conditions under which people will be less likely to engage in this behavior?

You will learn what types of parenting practices can help parents maintain solid bonds with their children (Chapter 10); you will learn what forces make strangers reluctant to offer assistance in emergency situations and how those forces can be overcome (Chapter 16). These are just a few examples of the broad range of circumstances in which psychologists use their knowledge to control and improve people's lives. In this respect, psychologists are a rather optimistic group; many believe that virtually any undesired behavior pattern can be modified by the proper intervention. *Psychology and Life* shares that optimism.

Stop and Review

- ① What are the four components of the definition of psychology?
- ② What four goals apply to psychologists who conduct research?
- ③ Why is there often a close relationship between the goals of explanation and prediction?

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THE EVOLUTION OF MODERN PSYCHOLOGY

Today, it is relatively easy to define psychology and to state the goals of psychological research. As you begin to study psychology, however, it is important to understand the many forces that led to the emergence of modern psychology. At the core of this historical review is one simple principle: *Ideas matter*. Much of the history of psychology has been characterized by heated debates about what constitutes the appropriate subject matter and methodologies for a science of mind and behavior.

This historical review will be carried out at two levels of analysis. The first section will consider the period of history in which some of the critical groundwork for modern psychology was laid down. This focus will enable you to witness at close range the battle of ideas. The second section will describe in a broader fashion seven perspectives that have emerged in the modern day. For both levels of focus, you should allow yourself to imagine the intellectual passion with which the theories evolved. 🔍

Psychology's Historical Foundations

In 1908, **Hermann Ebbinghaus** (1858–1909), one of the first experimental psychologists, wrote “Psychology has a long past, but only a short history” (Ebbinghaus, 1908/1973). Scholars had long asked important questions about human nature—about how people perceive reality, the nature of consciousness, and the origins of madness—but they did not possess the means to answer them. Consider the fundamental questions posed in the

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Critical Thinking in Your Life

DOES “COMFORT FOOD” REALLY GIVE COMFORT?

An important goal of *Psychology and Life* is to improve your ability to think critically: The text should help you “reach intelligent decisions about what [you] should believe and how [you] should act” (Appleby, 2006, p. 61). To get started toward that goal, let’s consider a real-world scenario. You’re having a tough day, so you decide to indulge in some comfort food. Now take a step back. What evidence would you want to decide whether comfort food really makes you feel better? Let’s see how researchers have approached this question.

If comfort food really gives comfort, people should consume more while experiencing emotional distress. To test that hypothesis, a team of researchers asked college women to watch a “brutal and violent” film excerpt (Evers et al., 2010). The researchers intended the excerpt to produce negative emotions—and it did. However, some of the women were told to suppress their emotional responses while they watched, “so that anybody looking at them would not be able to determine what kind of excerpt they were watching” (p. 797). A second group was not asked to hide their feelings. After watching the film, the students believed they were starting an unrelated study on taste. They were given the opportunity to eat both comfort food (for example, chocolate) and non-comfort food (for example, unsalted crackers). The women who had suppressed their emotions ate twice as much comfort food as the other group; they ate just about the same amount of non-comfort food. This pattern suggests that people actually do prefer comfort food when they are experiencing emotional turmoil.

But why does comfort food help with negative emotions? Another pair of researchers suggested that, across our lives, we mostly eat comfort food in the company of loved ones (Troisi & Gabriel, 2011). For that reason, we have associations built up in memory so that comfort food calls to mind the emotional warmth of those relationships. To test that hypothesis, the researchers assembled two groups of students: Some had previously reported that chicken soup was a comfort food; the second group did not have that association. At the start of the experiment, some students ate chicken soup and others did not. The students then completed a task in which they were given word fragments (for example, *li—*) that could be completed as relationship words (for example, *like*). The researchers demonstrated that the students who consumed chicken soup—when it counted as a comfort food—produced the most relationship words. For that group, the experience of eating chicken soup made relationship associations easily accessible in memory.


These projects suggest that the memories associated with the consumption of comfort food help people deal with negative emotions. Now, use your critical thinking skills. What else would you like to know before you indulge in your own comfort food binge? 

- In the first study, why might the researchers have kept their sample to just one sex?
- With respect to the researchers’ theory, why would chicken soup not be comfort food for everyone?

4th and 5th centuries B.C. by the classical Greek philosophers **Plato** (427–347 B.C.) and **Aristotle** (384–322 B.C.): How does the mind work? What is the nature of free will? What is the relationship of individual citizens to their community or state? Although forms of psychology existed in ancient Indian Yogic traditions, Western psychology traces its origin to the writings of these philosophers. Plato and Aristotle defined opposing views that continue to have an impact on contemporary thinking. Consider how people come to know about the world. In the *empiricist* view, people begin life with their mind as a blank tablet; the mind acquires information through experiences in the world. **John Locke** (1632–1704) articulated this position at length in the 17th century; its roots can be traced to Aristotle. In the *nativist* view, people begin life with mental structures that provide constraints on how they experience the world. **Immanuel Kant** (1724–1804) fully developed this position in the 18th century; its roots can be traced to Plato. (In later chapters, we revisit this theoretical debate in the form of “nature versus nurture.”) The French philosopher **René Descartes** (1596–1650) provided another important step toward contemporary psychology. Descartes proposed what, in his time, was a

very new and very radical idea: The human body is an “animal machine” that can be understood scientifically—by discovering natural laws through empirical observation. Toward the end of the 19th century, psychology began to emerge as a discipline when researchers applied the laboratory techniques from other sciences—such as physiology and physics—to the study of such fundamental questions from philosophy.

A critical figure in the evolution of modern psychology was **Wilhelm Wundt**, who, in 1879 in Leipzig, Germany, founded the first formal laboratory devoted to experimental psychology. Although Wundt had been trained as a physiologist, over his research career his interest shifted from questions of body to questions of mind: He wished to understand basic processes of sensation and perception as well as the speed of simple mental processes. By the time he established his psychology laboratory, Wundt had already accomplished a range of research and published the first of several editions of *Principles of Physiological*

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In 1879, Wilhelm Wundt founded the first formal laboratory devoted to experimental psychology. Suppose you decided to found your own psychology laboratory. What one area in your life would you study if you could?

Psychology (King et al., 2009). Once Wundt’s laboratory was established at Leipzig, he began to train the first graduate students specifically devoted to the emerging field of psychology. Those students often became founders of their own psychology laboratories around the world.

As psychology became established as a separate discipline, psychology laboratories began to appear in universities throughout North America, the first at Johns Hopkins University in 1883. These early laboratories often bore Wundt’s impact. For example, after studying with Wundt, **Edward Titchener** became one of the first psychologists in the United States, founding a laboratory at Cornell University in 1892. However, at around the same time, a young Harvard philosophy professor who had studied medicine and had strong interests in literature and religion developed a uniquely American perspective. **William James**, brother of the great novelist Henry James, wrote a two-volume work, *The Principles of Psychology* (1890/1950), which many experts consider to be the most important psychology text ever written. Shortly after, in 1892, G. Stanley Hall founded the American Psychological Association. By 1900 there were more than 40 psychology laboratories in North America (Benjamin, 2007).

Almost as soon as psychology emerged, a debate arose about the proper subject matter and methods for the new discipline. This debate isolated some of the issues that still loom large in psychology. Let’s consider the tension between structuralism and functionalism.

Structuralism: The Elements of the Mind Psychology’s potential to make a unique contribution to knowledge became apparent when psychology became a laboratory science organized around experiments. In Wundt’s laboratory, experimental participants made simple responses (saying yes or no, pressing a button) to stimuli they perceived under conditions varied by laboratory instruments. Because the data were collected through systematic, objective procedures, independent observers could replicate the results of these experiments. Emphasis on the

scientific method (see Chapter 2), concern for precise measurement, and statistical analysis of data characterized Wundt’s psychological tradition.

When Titchener brought Wundt’s psychology to the United States, he advocated that such scientific methods be used to study consciousness. Titchener’s goal was to uncover the underlying structure of the human mind by defining the component elements of an individual’s mental life. In fact, he conceived his research program in analogy to the work of chemists (1910, p. 49): “The psychologist arranges the mental elements precisely as the chemist classifies his elementary substances.” Titchener’s approach came to be known as **structuralism**, the study of the basic structural components of mind and behavior.

To discover the basic elements, Titchener relied on the technique of **introspection**, the systematic examination by individuals of their own thoughts and feelings about specific sensory experiences. Consider the domain of taste: Based on his introspections, Titchener suggested that all taste experiences emerge from combinations of the basic sensations of salty, sweet, sour, and bitter. In Chapter 4, you’ll learn that Titchener’s analysis was missing only one basic element. However, introspection functioned less well in other domains of human experience: Titchener and his followers identified more than 44,000 distinct elements of sensory experiences (Benjamin, 2007)! Structuralism attracted many critics because it was impossible to confirm that the products of each individual’s introspections were general aspects of human psychology.

One important alternative to structuralism, pioneered by the German psychologist **Max Wertheimer**, focused on the way in which the mind understands many experiences as *gestalts*—organized wholes—rather than as the sums of simple parts: Your experience of a painting, for example, is more than the sum of the individual daubs of paint. As you will see in Chapter 4, **Gestalt psychology** continues to have an impact on the study of perception.

A second major opposition to structuralism came under the banner of *functionalism*.

Functionalism: Minds With a Purpose William James agreed with Titchener that consciousness was central to the study of psychology. However, James focused his attention not on the elements of mental processes, but on their purpose. James wished to understand the ways in which consciousness functions to help people adapt effectively to their environments. James’s approach became known as **functionalism**.

For functionalists, the key question to be answered by research was “What is the function or purpose of any behavioral act?” For example, a structuralist might look at a *reflex* and try to identify its basic components. By contrast, a theorist like

structuralism The study of the structure of mind and behavior; the view that all human mental experience can be understood as a combination of simple elements or events.

introspection Individuals’ systematic examination of their own thoughts and feelings.

Gestalt psychology A school of psychology that maintains that psychological phenomena can be understood only when viewed as organized, structured wholes, not when broken down into primitive perceptual elements.

functionalism The perspective on mind and behavior that focuses on the examination of their functions in an organism’s interactions with the environment.



Classroom practices in the United States were changed through the efforts of the functionalist John Dewey. As a student, what classroom experiences have you experienced that encouraged your “intellectual curiosity”?

John Dewey focused on the functions of reflexes, which he described as “a continuously ordered sequence of acts, all adapted in themselves and in the order of their sequence, to reach a certain objective end, the reproduction of the species, the preservation of life, locomotion to a certain place” (1896, p. 366). Dewey’s concern for the practical uses of mental processes led to important advances in education. His theorizing provided the impetus for *progressive education* in his own laboratory school and more generally in the United States: “Rote learning was abandoned in favor of learning by doing, in expectation that intellectual curiosity would be encouraged and understanding would be enhanced” (Kendler, 1987, p. 124).

Although James believed in careful observation, he put little value on the rigorous laboratory methods of Wundt. In James’s psychology, there was a place for emotions, self, will, values, and even religious and mystical experience. His “warm-blooded” psychology recognized a uniqueness in each individual that could not be reduced to formulas or numbers from test results. For James, explanation rather than experimental control was the goal of psychology.

The Legacy of These Approaches Despite their differences, the insights of the practitioners of both structuralism and functionalism created an intellectual context in which contemporary psychology could flourish. Psychologists currently examine *both* the structure and the function of behavior. Consider the process of speech production. Suppose you want to invite a friend over to watch the Superbowl. To do so, the words you speak must serve the right function—*Superbowl, with me, today*—but also have the right structure: It wouldn’t do to say, “Would watch Superbowl me the with today you to like?” To understand how speech production works, researchers study the way that speakers fit meanings (functions) to the grammatical structures of their languages (Bock, 1990). (Chapter 8 will describe some of the processes of language production.) *Psychology and Life* will

emphasize both structure and function as we review both classic and contemporary research. Psychologists continue to employ a great variety of methodologies to study the general forces that apply to all humans as well as unique aspects of each individual.

Women as Pioneering Researchers

It probably won’t surprise you to learn that, early in its history, research and practice in psychology were dominated by men. Even when they were still few in numbers, however, women made substantial contributions to the field (Benjamin, 2007). Let’s consider four women who were pioneers in different areas of psychological research.

Mary Whiton Calkins (1863–1930) studied with William James at Harvard University. However, because she was a woman she was allowed to participate only as a “guest” graduate student. Although she completed all the requirements for a PhD with an exceptional record, the Harvard administration refused to grant a PhD to a woman. Despite this insult, Calkins established one of the first psychology laboratories in the United States and invented important techniques for studying memory. In 1905, she became the first woman president of the American Psychological Association.

In 1894, **Margaret Floy Washburn** (1871–1939) graduated from Cornell University to become the first woman to receive a PhD in psychology. She went on to write an influential early textbook, *The Animal Mind*, which was published in 1908. The book provided a review of research on perception, learning, and memory across animal species. In 1921, Washburn became the second woman to lead the American Psychological Association.



In 1894, Margaret Washburn became the first woman to receive a PhD in psychology. She went on to write an influential textbook, *The Animal Mind* (1908). What challenges might she have faced as a pioneer woman researcher?

Helen Thompson Wooley (1874–1947) accomplished some of the earliest research that examined differences between the sexes (Maracek et al., 2003; Milar, 2000). For her PhD research at the University of Chicago in 1900, Wooley compared the performance of 25 men and 25 women on a battery of tests, including tests of intelligence and emotions. The research led her to the conclusion that differences between the sexes arose not from natural ability but rather from differences in men and women’s social experiences across their life spans. Wooley also offered a famous critique of “the flagrant personal bias, logic martyred in the cause of supporting a prejudice, unfounded assertions, and even sentimental rot and drivel” (Wooley, 1910, p. 340) that characterized research, largely by men, on differences between the sexes.

Leta Stetter Hollingworth (1886–1939) was inspired by Wooley to bring research data to bear on claims about gender differences (Maracek et al., 2003). In particular, Hollingworth attacked the claim that women were genetically inferior to men with respect to their levels of creativity and intelligence. Hollingworth also conducted some of the earliest research on children who tested at the extremes of intelligence—both those who had mental retardation and those who were gifted. She invented a curriculum to help nurture the talents of gifted children that she was able to implement in school settings in New York City.

Since the days in which these women were pioneers, the field of psychology has changed in the direction of far greater diversity. In fact, in recent years more women than men have earned PhDs in the field (National Science Foundation, 2010). I will highlight the work of diverse researchers throughout *Psychology and Life*. As psychology continues to contribute to the scientific and human enterprise, more people—women and men, and members of all segments of society—are being drawn to its richness.

Perspectives on Psychology

Suppose your friend accepts the invitation to join you for the Superbowl. What *perspective* does each of you bring to your viewing of the game? Suppose one of you played football in high school, whereas the other did not. Or suppose one of you has rooted from birth for one of the competing teams, whereas the other has no prior commitments. You can see how these different perspectives would affect the way in which you evaluate the game as it unfolds.

In a similar fashion, psychologists’ perspectives determine the way in which they examine behavior and mental processes. The perspectives influence what psychologists look for, where they look, and what research methods they use. This section defines seven perspectives—psychodynamic, behaviorist, humanistic, cognitive, biological, evolutionary, and sociocultural. As you read the section, note how each perspective defines the causes and consequences of behavior. 👁

👁 **Watch the Video** *The Basics: Diverse Perspectives on MyPsychLab*

psychodynamic perspective A psychological model in which behavior is explained in terms of past experiences and motivational forces; actions are viewed as stemming from inherited instincts, biological drives, and attempts to resolve conflicts between personal needs and social requirements.

A word of caution: Although each perspective represents a different approach to the central issues of psychology, you should come to appreciate why most psychologists borrow and blend concepts from more than one of these perspectives. Each perspective enhances the understanding of the entirety of human experience.

The Psychodynamic Perspective According to the **psychodynamic perspective**, behavior is driven, or motivated, by powerful inner forces. In this view, human actions stem from inherited instincts, biological drives, and attempts to resolve conflicts between personal needs and society’s demands. Deprivation states, physiological arousal, and conflicts provide the power for behavior. According to this model, the organism stops reacting when its needs are satisfied and its drives reduced. The main purpose of action is to reduce tension.

Psychodynamic principles of motivation were most fully developed by the Viennese physician **Sigmund Freud** (1856–1939) in the late 19th and early 20th centuries. Freud’s ideas grew out of his work with mentally disturbed patients, but he believed that the principles he observed applied to both normal and abnormal behavior. Freud’s psychodynamic theory views a person as pulled and pushed by a complex network of inner and outer forces. Freud’s model was the first to recognize that human nature is not always rational and that actions may be driven by motives that are not in conscious awareness.

Many psychologists since Freud have taken the psychodynamic model in new directions. Freud himself emphasized early childhood as the stage in which personality is formed. Neo-Freudian theorists have broadened psychodynamic theory to include social influences and interactions that occur over the individual’s entire lifetime. Psychodynamic ideas have had a



Sigmund Freud, photographed with his daughter, Anna, on a trip to the Italian Alps in 1913. Freud suggested that behavior is often driven by motives outside of conscious awareness. What implications does that perspective have for the ways in which you make life choices?