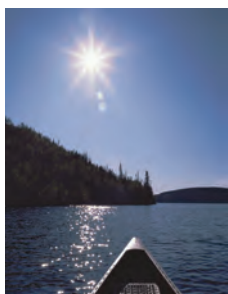


Contents

Preface xxvii

CHAPTER 1

The Science of Psychology 1



THE NATURE OF PSYCHOLOGY 2

Psychology as a Basic and Applied Science 3

Robber's Cave and the Jigsaw Classroom 3

The Goals of Psychology 4

Psychology's Broad Scope: A Levels-of-Analysis Framework 4

Mind-Body and Nature-Nurture Interactions 5

PERSPECTIVES ON BEHAVIOR 6

Psychology's Intellectual Roots 6

Early Schools: Structuralism and Functionalism 7

The Psychodynamic Perspective: The Forces Within 8

Psychoanalysis: Freud's Great Challenge 8

Modern Psychodynamic Theory 8

The Behavioral Perspective: The Power of the Environment 9

Origins of the Behavioral Perspective 9

Behaviorism 9

Cognitive Behaviorism 10

WHAT DO YOU THINK? Are the Students Lazy? 10

The Humanistic Perspective: Self-Actualization and Positive Psychology 10

The Cognitive Perspective: The Thinking Human 11

Origins of the Cognitive Perspective 11

Renewed Interest in the Mind 12

The Modern Cognitive Perspective 12

The Sociocultural Perspective: The Embedded Human 13

Cultural Learning and Diversity 13

RESEARCH CLOSE-UP Love and Marriage in Eleven Cultures 14

The Biological Perspective: The Brain, Genes, and Evolution 15

Behavioral Neuroscience 15

Behavior Genetics 16

Evolutionary Psychology 16

USING LEVELS OF ANALYSIS TO INTEGRATE THE PERSPECTIVES 18

An Example: Understanding Depression 18

Summary of Major Themes 19

BENEATH THE SURFACE What Did You Expect? 20

PSYCHOLOGY TODAY 21

A Global Science and Profession 21

Psychology and Public Policy 22

Psychology and Your Life 23

APPLYING PSYCHOLOGICAL SCIENCE How to Enhance Your Academic Performance 23

CHAPTER 2

Studying Behavior Scientifically 27



SCIENTIFIC PRINCIPLES IN PSYCHOLOGY 28

- Scientific Attitudes 29
- Gathering Evidence: Steps in the Scientific Process 29
 - Step 1: Identify a Question of Interest 29
 - Step 2: Gather Information and Form Hypothesis 29
 - Step 3: Test Hypothesis by Conducting Research 29

Step 4: Analyze Data, Draw Conclusions, and Report Findings 29

Step 5: Build a Body of Knowledge 31

Two Approaches to Understanding Behavior 31

Hindsight (After-the-Fact Understanding) 31

Understanding through Prediction, Control, and Theory Building 32

Defining and Measuring Variables 33

Self-Reports and Reports by Others 33

Measures of Overt Behavior 34

Psychological Tests 35

Physiological Measures 35

ETHICAL PRINCIPLES IN RESEARCH 35

Ethical Standards in Human Research 36

Ethical Standards in Animal Research 37

METHODS OF RESEARCH 37

Descriptive Research: Recording Events 37

Case Studies: The Hmong Sudden Death Syndrome 37

Naturalistic Observation: Bullies in the Schoolyard 39

Survey Research: Adolescents' Exposure to Abuse and Violence 40

WHAT DO YOU THINK? Should You Trust Internet and Pop Media Surveys? 41

Correlational Research: Measuring Associations Between Events 41

RESEARCH CLOSE-UP Very Happy People 42

Correlation Does Not Establish Causation 43

The Correlation Coefficient 43

WHAT DO YOU THINK? Does Eating Ice Cream Cause People to Drown? 43

Correlation as a Basis for Prediction 44

Experiments: Examining Cause and Effect 45

Independent and Dependent Variables 46

Experimental and Control Groups 46

Two Basic Ways to Design an Experiment 46

Manipulating Two Independent Variables: Effects of Cell-Phone Use and Traffic Density on Driving Performance 47

THREATS TO THE VALIDITY OF RESEARCH 50

Confounding of Variables 50

Placebo Effects 50

Experimenter Expectancy Effects 51

Replicating and Generalizing the Findings 51

BENEATH THE SURFACE Science, Psychics, and the Paranormal 52

ANALYZING AND INTERPRETING DATA 53

Being a Smart Consumer of Statistics 53

Using Statistics to Describe Data 54

Measures of Central Tendency 54

Measures of Variability 55

Using Statistics to Make Inferences 55

Meta-Analysis: Combining the Results of Many Studies 56

CRITICAL THINKING IN SCIENCE AND EVERYDAY LIFE 56

APPLYING PSYCHOLOGICAL SCIENCE Evaluating Claims in Research and Everyday Life 57

CHAPTER 3

Genes, Environment, and Behavior 60



GENETIC INFLUENCES ON BEHAVIOR 62

- Chromosomes and Genes 63
 - Dominant, Recessive, and Polygenic Effects* 64

The Human Genome 64

A Genetic Map of the Brain 64

Behavior Genetics 65

Family, Adoption, and Twin Studies 65

Heritability: Estimating Genetic Influence 66

ADAPTING TO THE ENVIRONMENT: THE ROLE OF LEARNING 67

How Do We Learn? The Search for Mechanisms 67

Why Do We Learn? The Search for Functions 68

Learning, Culture, and Evolution 69
Shared and Unshared Environments 69

BEHAVIOR GENETICS, INTELLIGENCE, AND PERSONALITY 70

Genes, Environment, and Intelligence 70
Heritability of Intelligence 70
Environmental Determinants 71
 Shared Family Environment 71
 Environmental Enrichment and Deprivation 71
 Educational Experiences 72
 Personality Development 72
Heritability of Personality 72
Environment and Personality Development 72

GENE-ENVIRONMENT INTERACTIONS 73

How the Environment Can Influence Gene Expression 73
 How Genes Can Influence the Environment 75

GENETIC MANIPULATION AND CONTROL 76

APPLYING PSYCHOLOGICAL SCIENCE Thinking Critically about
 Genetic Screening 77

EVOLUTION AND BEHAVIOR: INFLUENCES FROM THE DISTANT PAST 78

Evolution of Adaptive Mechanisms 79
Natural Selection 79
 Evolutionary Adaptations 79
 Brain Evolution 80
 Evoked Culture 81

WHAT DO YOU THINK? Natural Selection and Genetic
 Diseases 81

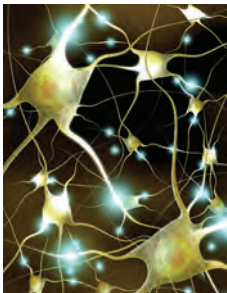
Evolution and Human Nature 81
Sexuality and Mate Preferences 82

RESEARCH CLOSE-UP Sex Differences in the Ideal Mate:
 Evolution or Social Roles? 84
Evolutionary Approaches to Personality 86

BENEATH THE SURFACE How *Not* to Think about Evolutionary
 Theory 87

CHAPTER 4

The Brain and Behavior 91



NEURONS 93

The Electrical Activity of Neurons 94
*Nerve Impulses: The Action
 Potential* 94
 It's All or Nothing 95
 The Myelin Sheath 96

HOW NEURONS COMMUNICATE: SYNAPTIC TRANSMISSION 96

Neurotransmitters 96

Specialized Neurotransmitter Systems 97

APPLYING PSYCHOLOGICAL SCIENCE Understanding How Drugs
 Affect Your Brain 99

THE NERVOUS SYSTEM 100

The Peripheral Nervous System 100
The Somatic Nervous System 101
The Autonomic Nervous System 101
 The Central Nervous System 102
The Spinal Cord 102
The Brain 103
Unlocking the Secrets of the Brain 103
 Neuropsychological Tests 103
 Destruction and Stimulation Techniques 103

Electrical Recording 104

Brain Imaging 104

THE HIERARCHICAL BRAIN: STRUCTURES AND BEHAVIORAL FUNCTIONS 106

The Hindbrain 106

The Brain Stem: Life-Support Systems 106

The Cerebellum: Motor-Coordination Center 107

The Midbrain 107

The Reticular Formation: The Brain's Gatekeeper 108

The Forebrain 108

The Thalamus: The Brain's Sensory Switchboard 108

The Hypothalamus: Motivation and Emotion 108

*The Limbic System: Memory, Emotion, and Goal-Directed
 Behavior* 109

The Cerebral Cortex: Crown of the Brain 110

The Motor Cortex 110

The Sensory Cortex 111

Speech Comprehension and Production 112

Association Cortex 112

The Frontal Lobes: The Human Difference 113

RESEARCH CLOSE-UP Inside the Brain of a Killer 113

HEMISPHERIC LATERALIZATION: THE LEFT AND RIGHT BRAINS 115

The Split Brain: Dividing the Hemispheres 115

WHAT DO YOU THINK? Two Minds in One Brain? 116

PLASTICITY IN THE BRAIN: THE ROLE OF EXPERIENCE AND THE RECOVERY OF FUNCTION 117

How Experience Influences Brain Development 118

Healing the Nervous System 119

BENEATH THE SURFACE Do We Really Use Only Ten Percent of Our Brain Capacity? 120

INTERACTIONS WITH THE ENDOCRINE AND IMMUNE SYSTEMS 120

Interactions with the Endocrine System 120

Interactions Involving the Immune System 121

CHAPTER 5

Sensation and Perception 125



SENSORY PROCESSES 127

Stimulus Detection: The Absolute Threshold 128

Signal Detection Theory 128

Subliminal Stimuli: Can They Affect Behavior? 129

BENEATH THE SURFACE Are Subliminal Self-Help Products Effective? 129
The Difference Threshold 130

Sensory Adaptation 130

THE SENSORY SYSTEMS 131

Vision 132

The Human Eye 132

Photoreceptors: The Rods and Cones 132

Visual Transduction: From Light Waves to Nerve Impulses 134

Brightness Vision and Dark Adaptation 134

Color Vision 135

The Trichromatic Theory 135

Opponent-Process Theory 135

Dual Processes in Color Transduction 136

Color-Deficient Vision 137

Analysis and Reconstruction of Visual Scenes 138

Audition 139

Auditory Transduction: From Pressure Waves to Nerve Impulses 141

Coding of Pitch and Loudness 142

Sound Localization 142

WHAT DO YOU THINK? Navigating in Fog: Professor Mayer's Topophone 143

Hearing Loss 143

Taste and Smell: The Chemical Senses 144

Gustation: The Sense of Taste 144

Olfaction: The Sense of Smell 144

The Skin and Body Senses 145

The Tactile Senses 145

The Body Senses 146

APPLYING PSYCHOLOGICAL SCIENCE Sensory Prosthetics: "Eyes" for the Blind, "Ears" for the Hearing Impaired 147

PERCEPTION: THE CREATION OF EXPERIENCE 150

Perception Is Selective: The Role of Attention 151

Inattentional Blindness 151

Environmental and Personal Factors in Attention 151

Perceptions Have Organization and Structure 152

Gestalt Principles of Perceptual Organization 152

Perception Involves Hypothesis Testing 154

Perception Is Influenced by Expectations:

Perceptual Sets 154

Stimuli Are Recognizable Under Changing Conditions:

Perceptual Constancies 155

WHAT DO YOU THINK? Why Does That Rising Moon Look So Big? 156

PERCEPTION OF DEPTH, DISTANCE, AND MOVEMENT 157

Depth and Distance Perception 157

Monocular Depth Cues 157

Binocular Depth Cues 158

Perception of Movement 158

ILLUSIONS: FALSE PERCEPTUAL HYPOTHESES 159

WHAT DO YOU THINK? Explain This Striking Illusion 160

RESEARCH CLOSE-UP Stalking a Deadly Illusion 161

EXPERIENCE, CRITICAL PERIODS, AND PERCEPTUAL DEVELOPMENT 163

Cross-Cultural Research on Perception 164

Critical Periods: The Role of Early Experience 165

Restored Sensory Capacity 166

Some Final Reflections 167

CHAPTER 6

States of Consciousness 169



THE PUZZLE OF CONSCIOUSNESS 171

- Characteristics of Consciousness 171
- Measuring States of Consciousness 172
- Levels of Consciousness 172
 - The Freudian Viewpoint* 172
 - The Cognitive Viewpoint* 173
- Unconscious Perception and Influence 173
 - Visual Agnosia* 173

Blindsight 174

Priming 174

The Emotional Unconscious 174

Why Do We Have Consciousness? 174

The Neural Basis of Consciousness 175

Windows to the Brain 175

Consciousness as a Global Workspace 176

CIRCADIAN RHYTHMS: OUR DAILY BIOLOGICAL CLOCKS 177

Keeping Time: Brain and Environment 177

Early Birds and Night Owls 177

WHAT DO YOU THINK? Early Birds, Climate, and Culture 178

Environmental Disruptions of Circadian Rhythms 178

APPLYING PSYCHOLOGICAL SCIENCE Outsmarting Jet Lag, Night-Work Disruptions, and Winter Depression 179

SLEEP AND DREAMING 180

Stages of Sleep 180

Stage 1 through Stage 4 181

REM Sleep 181

Getting a Night's Sleep: From Brain to Culture 182

How Much Do We Sleep? 183

Do We Need Eight Hours of Nightly Sleep? 184

Sleep Deprivation 184

Why Do We Sleep? 185

Sleep and Bodily Restoration 185

Sleep as an Evolved Adaptation 185

Sleep and Memory Consolidation 185

Sleep Disorders 186

Insomnia 186

Narcolepsy 187

REM-Sleep Behavior Disorder 187

Sleepwalking 188

Nightmares and Night Terrors 188

Sleep Apnea 188

The Nature of Dreams 188

When Do We Dream? 188

What Do We Dream About? 189

Why Do We Dream? 189

Freud's Psychoanalytic Theory 189

BENEATH THE SURFACE When Dreams Come True 190

Activation-Synthesis Theory 190

Cognitive Theories 191

Toward Integration 191

Daydreams and Waking Fantasies 191

DRUG-INDUCED STATES 193

Drugs and the Brain 193

How Drugs Facilitate Synaptic Transmission 193

How Drugs Inhibit Synaptic Transmission 194

Drug Tolerance and Dependence 194

Learning, Drug Tolerance, and Overdose 195

Drug Addiction and Dependence 195

Misconceptions about Substance Dependence 195

Depressants 196

Alcohol 196

RESEARCH CLOSE-UP Drinking and Driving: Decision Making in Altered States 197

Barbiturates and Tranquilizers 198

Stimulants 198

Amphetamines 198

Cocaine 198

Ecstasy (MDMA) 199

Opiates 200

Hallucinogens 200

Marijuana 200

Misconceptions about Marijuana 200

From Genes to Culture: Determinants of Drug Effects 201

Biological Factors 201

Psychological Factors 201

Environmental Factors 202

HYPNOSIS 203

The Scientific Study of Hypnosis 203

Hypnotic Behaviors and Experiences 203

Involuntary Control and Behaving against One's Will 203

Amazing Feats 204

WHAT DO YOU THINK? Hypnosis and Amazing Feats 204

Pain Tolerance 204

Hypnotic Amnesia 204

Hypnosis, Memory Enhancement, and Eyewitness Testimony 205

Theories of Hypnosis 205

Dissociation Theories 206

Social-Cognitive Theories 206

The Hypnotized Brain 207

CHAPTER 7**Learning: The Role of Experience 210****ADAPTING TO THE ENVIRONMENT 212**

- Learning as Personal Adaptation 212
- Habituation 212

CLASSICAL CONDITIONING: ASSOCIATING ONE STIMULUS WITH ANOTHER 213

- Pavlov's Pioneering Research 213
- Basic Principles 214
 - Acquisition* 214
 - Extinction and Spontaneous Recovery* 215

WHAT DO YOU THINK? Why Did Carol's Car Phobia Persist? 216

- Generalization and Discrimination* 216
- Higher-Order Conditioning* 217

Applications of Classical Conditioning 217

- Acquiring and Overcoming Fear* 217

WHAT DO YOU THINK? Was the "Little Albert" Study Ethical? 218

- Attraction and Aversion* 218
- Sickness and Health* 218

Allergic Reactions 218

Anticipatory Nausea and Vomiting 219

The Immune System 219

OPERANT CONDITIONING: LEARNING THROUGH CONSEQUENCES 220

Thorndike's Law of Effect 220

Skinner's Analysis of Operant Conditioning 220

- Distinguishing Operant from Classical Conditioning* 222

Antecedent Conditions: Identifying When to Respond 222

Consequences: Determining How to Respond 223

- Positive Reinforcement* 223

Primary and Secondary Reinforcers 223

- Negative Reinforcement* 224

Operant Extinction 224

- Aversive Punishment* 225

BENEATH THE SURFACE Spare the Rod, Spoil the Child? 225

Response Cost 226

Immediate, Delayed, and Reciprocal Consequences 227

WHAT DO YOU THINK? Can You Explain the "Supermarket Tantrum"? 227

Shaping and Chaining: Taking One Step at a Time 227

Generalization and Discrimination 228

Schedules of Reinforcement 229

- Fixed-Ratio Schedule* 229

Variable-Ratio Schedule 230

Fixed-Interval Schedule 230

Variable-Interval Schedule 230

Reinforcement Schedules, Learning, and Extinction 230

Escape and Avoidance Conditioning 231

Applications of Operant Conditioning 232

Education and the Workplace 232

Specialized Animal Training 232

Modifying Problem Behaviors 232

APPLYING PSYCHOLOGICAL SCIENCE Using Operant Principles to

Modify Your Behavior 234

CROSSROADS OF CONDITIONING 236

Biological Constraints: Evolution and Preparedness 236

- Constraints on Classical Conditioning: Learned Taste Aversions* 236

Are We Biologically Prepared to Fear Certain Things? 237

Constraints on Operant Conditioning: Animals That "Won't Shape Up" 238

Cognition and Conditioning 238

Early Challenges to Behaviorism: Insight and Cognitive Maps 238

Cognition in Classical Conditioning 240

Cognition in Operant Conditioning 241

The Role of Awareness 241

Latent Learning 241

Self-Evaluations as Reinforcers and Punishers 242

OBSERVATIONAL LEARNING: WHEN OTHERS SHOW THE WAY 243

Bandura's Social-Cognitive Theory 243

The Modeling Process and Self-Efficacy 243

Imitation of Aggression and Prosocial Behavior 244

Applications of Observational Learning 244

RESEARCH CLOSE-UP Using Social-Cognitive Theory to Prevent

AIDS: A National Experiment 245

THE ADAPTIVE BRAIN 246

CHAPTER 8

Memory 250



MEMORY AS INFORMATION PROCESSING 252

- A Three-Stage Model 252
- Sensory Memory* 253
- Working/Short-Term Memory* 253
- Memory Codes 254
- Capacity and Duration 254

Putting Short-Term Memory to Work 255

Components of Working Memory 255

Long-Term Memory 255

ENCODING: ENTERING INFORMATION 257

Effortful and Automatic Processing 257

Levels of Processing: When Deeper Is Better 257

Exposure and Rehearsal 258

Organization and Imagery 259

Hierarchies and Chunking 259

Visual Imagery 259

Other Mnemonic Devices 260

How Prior Knowledge Shapes Encoding 260

Schemas: Our Mental Organizers 260

Schemas, Encoding, and Expertise 260

Encoding and Exceptional Memory 261

WHAT DO YOU THINK? Would Perfect Memory Be a Gift or a Curse? 262

STORAGE: RETAINING INFORMATION 262

Memory as a Network 262

Associative Networks 262

Neural Networks 263

Types of Long-Term Memory 264

Declarative and Procedural Memory 264

Explicit and Implicit Memory 265

RETRIEVAL: ACCESSING INFORMATION 265

The Value of Multiple Cues 266

The Value of Distinctiveness 266

Arousal, Emotion, and Memory 266

BENEATH THE SURFACE Do We Really Remember It Like It Was Yesterday? 268

The Effects of Context, State, and Mood on Memory 269

Context-Dependent Memory: Returning to the Scene 269

State-Dependent Memory: Arousal, Drugs, and Mood 270

FORGETTING 271

The Course of Forgetting 271

Why Do We Forget? 272

Encoding Failure 272

Decay of the Memory Trace 273

Interference 273

Motivated Forgetting 274

Forgetting to Do Things: Prospective Memory 274

Amnesia 274

Retrograde and Anterograde Amnesia 274

Dementia and Alzheimer's Disease 275

Infantile (Childhood) Amnesia 276

MEMORY AS A CONSTRUCTIVE PROCESS 276

Memory Distortion and Schemas 277

RESEARCH CLOSE-UP Memory Illusions: Remembering Things That Never Occurred 278

Misinformation Effects and Eyewitness Testimony 279

Source Confusion 280

The Child as Eyewitness 280

Accuracy and Suggestibility 280

Recall of Traumatic Events 281

True versus False Reports: Can Professionals Tell Them Apart? 281

The Recovered Memory Controversy 281

Culture and Memory Construction 282

MEMORY AND THE BRAIN 284

Where Are Memories Formed and Stored? 284

Sensory and Working Memory 284

Long-Term Memory 285

Declarative Memory 285

Procedural Memory 285

How Are Memories Formed? 286

Synaptic Change and Memory 286

Long-Term Potentiation 286

APPLYING PSYCHOLOGICAL SCIENCE Improving Memory and Academic Learning 287

CHAPTER 9

Language and Thinking 290



LANGUAGE 291

Adaptive Functions of Language 292

Properties of Language 292

Language Is Symbolic and Structured 292

Language Conveys Meaning 293

Language Is Generative and Permits Displacement 293

The Structure of Language 293

Surface Structure and Deep Structure 293

WHAT DO YOU THINK? Discerning Surface and Deep Structures of Language 294

The Hierarchical Structure of Language 294

Understanding and Producing Language 294

The Role of Bottom-Up Processing 295

The Role of Top-Down Processing 295

Pragmatics: The Social Context of Language 296

WHAT DO YOU THINK? The Sleeping Policeman 297

Language Functions, the Brain, and Sex Differences 297

Acquiring a First Language 298

Biological Foundations 298

Social Learning Processes 298

Developmental Timetable and Sensitive Periods 299

Can Animals Acquire Human Language? 300

Washoe: Early Signs of Success 300

Project Nim: Dissent from Within 301

Kanzi: Chimpanzee versus Child 301

Is It Language? 302

Bilingualism 302

Does Bilingualism Affect Other Cognitive Abilities? 302

BENEATH THE SURFACE Learning a Second Language: Is Earlier Better? 303

The Bilingual Brain 304

Linguistic Influences on Thinking 305

THINKING 307

Thought, Brain, and Mind 307

Concepts and Propositions 308

Reasoning 309

Deductive Reasoning 309

Inductive Reasoning 309

Stumbling Blocks in Reasoning 310

Distraction by Irrelevant Information 310

Belief Bias 310

Emotions and Framing 310

Problem Solving and Decision Making 311

Steps in Problem Solving 311

Understanding, or Framing, the Problem 311

Generating Potential Solutions 311

Testing the Solutions 312

Evaluating Results 312

The Role of Problem-Solving Schemas 312

Algorithms and Heuristics 313

Uncertainty, Heuristics, and Decision Making 313

The Representativeness Heuristic 314

The Availability Heuristic 315

Confirmation Bias and Overconfidence 315

APPLYING PSYCHOLOGICAL SCIENCE Guidelines for Creative Problem Solving 316

Knowledge, Expertise, and Wisdom 317

Acquiring Knowledge: Schemas and Scripts 317

The Nature of Expertise 318

Expert Schemas and Memory 318

What Is Wisdom? 318

Mental Imagery 319

Mental Rotation 319

Are Mental Images Pictures in the Mind? 320

Mental Imagery as Perception 321

Mental Imagery as Language 321

Mental Imagery and the Brain 321

Metacognition: Knowing Your Own Cognitive Abilities 322

Recognizing What You Do and Don't Know 322

RESEARCH CLOSE-UP "Why Did I Get That Wrong?" Improving College Students' Awareness of Whether They Understand Text Material 322

Further Advice on Improving Metacomprehension 324

CHAPTER 10

Intelligence 328



INTELLIGENCE IN HISTORICAL PERSPECTIVE 330

- Sir Francis Galton: Quantifying Mental Ability 330
- Alfred Binet's Mental Tests 331
- Binet's Legacy: An Intelligence-Testing Industry Emerges 332

THE NATURE OF INTELLIGENCE 332

- The Psychometric Approach: The Structure of Intellect 332

Factor Analysis 333

The g Factor: Intelligence as General Mental Capacity 333

Intelligence as Specific Mental Abilities 334

Crystallized and Fluid Intelligence 334

Carroll's Three-Stratum Model: A Modern Synthesis 335

Cognitive Process Approaches: The Nature of Intelligent Thinking 336

Broader Conceptions of Intelligence: Beyond Mental Competencies 336

Gardner's Multiple Intelligences 337

Emotional Intelligence 338

THE MEASUREMENT OF INTELLIGENCE 340

Increasing the Informational Yield from Intelligence Tests 341

Theory-Based Intelligence Tests 341

Should We Test for Aptitude or Achievement? 341

Psychometric Standards for Intelligence Tests 342

Reliability 342

Validity 343

Intelligence and Academic Performance 343

Job Performance, Income, and Longevity 343

Standardization 344

The Flynn Effect: Are We Getting Smarter? 344

Testing Conditions: Static and Dynamic Testing 345

Assessing Intelligence in Non-Western Cultures 346

BENEATH THE SURFACE Brain Size and Intelligence 347

HEREDITY, ENVIRONMENT, AND INTELLIGENCE 348

APPLYING PSYCHOLOGICAL SCIENCE Early-childhood Interventions: A Means of Boosting Intelligence? 350

GROUP DIFFERENCES IN INTELLIGENCE 351

Ethnic Group Differences 352

Are the Tests Biased? 352

What Factors Underlie the Differences? 352

Sex Differences in Cognitive Abilities 353

Beliefs, Expectations, and Cognitive Performance 354

RESEARCH CLOSE-UP Stereotype Threat and Cognitive Performance 355

EXTREMES OF INTELLIGENCE 356

The Intellectually Gifted 356

WHAT DO YOU THINK? Are Gifted Children Maladjusted? 357

Mental Retardation 357

A Concluding Thought 358

CHAPTER 11

Motivation and Emotion 362



MOTIVATION 363

Perspectives on Motivation 364

Evolution, Instincts, and Genes 364

Homeostasis and Drives 364

Approach and Avoidance Motivation: The BAS and BIS 365

Cognitive Processes: Incentives and Expectancies 365

Psychodynamic and Humanistic Views 366

Maslow's Need Hierarchy 366

Self-Determination Theory 366

WHAT DO YOU THINK? Is Maslow's Need Hierarchy Valid? 367

Hunger and Weight Regulation 367

The Physiology of Hunger 367

Signals That Start and Terminate a Meal 368

Signals That Regulate General Appetite and Weight 368

Brain Mechanisms 369

Psychological Aspects of Hunger 370

Environmental and Cultural Factors 372

Obesity 372

Genes and Environment 373

Dieting and Weight Loss 373

Eating Disorders: Anorexia and Bulimia 373

Causes of Anorexia and Bulimia 374

- Sexual Motivation 375
Sexual Behavior: Patterns and Changes 375
The Physiology of Sex 376
 The Sexual Response Cycle 376
 Hormonal Influences 377
The Psychology of Sex 377
Cultural and Environmental Influences 378
Sexual Orientation 279
 Prevalence of Different Sexual Orientations 379
 Determinants of Sexual Orientation 379

WHAT DO YOU THINK? Fraternal Birth Order and Male

- Homosexuality 381
 Social Motivation 381
Why Do We Affiliate? 381
 Achievement Motivation 383
Motive for Success and Fear of Failure 383
Achievement Goal Theory 384
Achievement Goal Orientations 384
 Motivational Climate 385
Family, Culture, and Achievement Needs 386
 Motivational Conflict 387

EMOTION 388

- The Nature of Emotions 388
Eliciting Stimuli 389
The Cognitive Component 389
 Culture and Appraisal 390

- The Physiological Component* 391
 Brain Structures and Neurotransmitters 391
 Hemispheric Activation and Emotion 392
 Autonomic and Hormonal Processes 392

BENEATH THE SURFACE The Lie Detector Controversy 393

- The Behavioral Component* 394
 Evolution and Emotional Expression 394
 Facial Expression of Emotion 394
 Cultural Display Rules 396
 Instrumental Behaviors 397

Theories of Emotion 398

- The James-Lange Somatic Theory* 398
The Cannon-Bard Theory 398
The Role of Autonomic Feedback 398
The Role of Expressive Behaviors 399
Cognitive-Affective Theories 400

RESEARCH CLOSE-UP Cognition-Arousal Relations: Two Classic Experiments 400

Happiness 403

- How Happy Are People?* 403
What Makes People Happy? 403
 Personal Resources 403
 Psychological Processes 404

APPLYING PSYCHOLOGICAL SCIENCE How to Be Happy: Guidelines from Psychological Research 405

A Concluding Thought 406

CHAPTER 12

Development Over the Life Span 408



MAJOR ISSUES AND METHODS 409

PRENATAL DEVELOPMENT 411

- Genetics and Sex Determination 411
 Environmental Influences 412

INFANCY AND CHILDHOOD 413

- The Amazing Newborn 413
 Sensory Capabilities and Perceptual Preferences 413
Reflexes and Learning 414

Physical Development 415

- The Young Brain* 415
Environmental and Cultural Influences 416

Cognitive Development 416

- Piaget's Stage Model* 416
 Sensorimotor Stage 417
 Preoperational Stage 417

Concrete Operational Stage 419

Formal Operational Stage 419

Assessing Piaget's Theory: Stages, Ages, and Culture 419

The Social Context of Cognitive Development 419

Information-Processing Approaches 420

Information-Search Strategies 420

Processing Speed, Attention, and Response Inhibition 420

Working Memory and Long-Term Memory 420

Metacognition 421

Understanding the Physical World 421

Theory of Mind: Understanding Mental States 422

Social-Emotional and Personality Development 422

Early Emotions and Emotion Regulation 422

Temperament 423

WHAT DO YOU THINK? Shy Child, Shy Adult? 424

Erikson's Psychosocial Theory 424

Attachment 425

The Attachment Process 425

Types of Attachment 426

Attachment Deprivation 427

The Child-Care Controversy 427

APPLYING PSYCHOLOGICAL SCIENCE Understanding How Divorce and Remarriage Affect Children 428

Styles of Parenting 429

Parenting-Heredity Interactions 430

Gender Identity and Socialization 430

Moral Development 431

Moral Thinking 431

Culture, Gender, and Moral Reasoning 432

Moral Behavior and Conscience 432

ADOLESCENCE AND ADULTHOOD 434

Physical Development 435

Puberty 435

The Adolescent Brain 435

Physical Development in Adulthood 435

The Adult Brain 436

Cognitive Development 436

Reasoning and Information Processing in Adolescence 437

Information Processing in Adulthood 438

Intellectual Changes in Adulthood 438

BENEATH THE SURFACE Aging and Mental Ability: Use It or Lose It? 439

The Growth of Wisdom? 440

Cognitive Impairment in Old Age 441

Social-Emotional Development 441

Adolescents' Search for Identity 441

Relationships with Parents and Peers 442

Emotional Changes in Adolescence 443

The Transition to Adulthood 444

RESEARCH CLOSE-UP What Does It Take to Become an Adult? 444

Stages versus Critical Events in Adulthood 445

Marriage and Family 446

WHAT DO YOU THINK? Cohabitation as a "Trial Marriage" 447

Establishing a Career 447

Midlife Crisis: Fact or Fiction? 448

Retirement and the "Golden Years" 448

Death and Dying 448

CHAPTER 13

Personality 452



WHAT IS PERSONALITY? 454

THE PSYCHODYNAMIC PERSPECTIVE 455

Freud's Psychoanalytic Theory 455

Psychic Energy and Mental Events 456

The Structure of Personality 456

Conflict, Anxiety, and Defense 457

Psychosexual Development 458

Neoanalytic and Object Relations Approaches 458

Adult Attachment Styles 459

RESEARCH CLOSE-UP Attachment Style and Abusive Romantic Relationships 461

Evaluating the Psychodynamic Approach 462

Understanding Charles Whitman 463

THE PHENOMENOLOGICAL-HUMANISTIC PERSPECTIVE 464

George Kelly's Personal Construct Theory 464

Carl Rogers's Theory of the Self 465

The Self 465

The Need for Positive Regard 467

Fully Functioning Persons 467

WHAT DO YOU THINK? Is Self-Actualization a Useful Scientific Construct? 467

Research on the Self 467

Self-Esteem 467

Self-Verification and Self-Enhancement Motives 468

Evaluating the Phenomenological-Humanistic Approach 469

Understanding Charles Whitman 469

THE TRAIT PERSPECTIVE: MAPPING THE STRUCTURE OF PERSONALITY 470

Factor Analytic Approaches 470

Cattell's Sixteen Personality Factors 470

The Five Factor Model 471

Stability of Personality Traits over Time 472

BENEATH THE SURFACE How Consistent Is Our Behavior Across Situations? 473

Evaluating the Trait Approach 473

Understanding Charles Whitman 474

BIOLOGICAL FOUNDATIONS OF PERSONALITY 474

Genetics and Personality 474

Personality and the Nervous System 475

Eysenck's Extraversion-Stability Model 475

Temperament: Building Blocks of Personality 476

Evaluating the Biological Approach 477

Understanding Charles Whitman 478

BEHAVIORAL AND SOCIAL-COGNITIVE THEORIES 478

Julian Rotter: Expectancy, Reinforcement Value, and Locus of Control 479

Locus of Control 479

Albert Bandura: Social Learning and Self-Efficacy 480

Self-Efficacy 480

APPLYING PSYCHOLOGICAL SCIENCE Increasing Self-Efficacy through Systematic Goal Setting 482

Walter Mischel and Yuichi Shoda: The Cognitive-Affective Personality System 483

Encodings and Personal Constructs 483

Expectancies and Beliefs 484

Goals and Values 484

Affects (Emotions) 484

Competencies and Self-Regulatory Processes 484

Reconciling Personality Coherence with Behavioral Inconsistency 485

Evaluating Social-Cognitive Theories 486

Understanding Charles Whitman 487

CULTURE, GENDER, AND PERSONALITY 488

Culture Differences 489

Gender Schemas 490

PERSONALITY ASSESSMENT 490

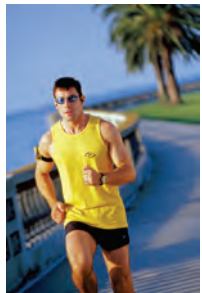
Interviews 491

Behavioral Assessment 492

Remote Behavior Sampling 492

Personality Scales 493

Projective Tests 494

CHAPTER 14**Adjusting to Life: Stress, Coping, and Health 497****STRESS AND WELL-BEING 499**

Stressors 499

Measuring Stressful Life Events 501

The Stress Response: A Mind-Body Link 501

Cognitive Appraisal 501

Physiological Responses 502

Effects of Stress on Well-Being 502

Stress and Psychological Well-Being 502

WHAT DO YOU THINK? Do Stressful Events

Cause Psychological Distress? 503

Stress and Illness 503

Stress and Aging 504

Stress and the Immune System 504

Factors That Influence Stress-Health Relations 506

Social Support 506

Physiological Reactivity 507

Type A Behavior Pattern 507

Mind as Healer or Slayer 508

Coping Efficacy and Control 508

Optimism and Positive Attitudes 508

Finding Meaning in Stressful Life Events 509

Resilient Children: Superkids or Ordinary Magic? 509

COPING WITH STRESS 511

Effectiveness of Coping Strategies 512

Controllability and Coping Efficacy 512

Trauma Disclosure and Emotional Release 513

Bottling Up Feelings: The Hidden Costs of Emotional Constraint 513

Gender, Culture, and Coping 514

RESEARCH CLOSE-UP Hold My Hand and I'll Be Fine 515

Stress Management Training 517

Cognitive Coping Skills 517

Relaxation Techniques 518

PAIN AND PAIN MANAGEMENT 518

Biological Mechanisms of Pain 519

Spinal and Brain Mechanisms 519

The Endorphins 520

Cultural and Psychological Influences on Pain 521

Cultural Factors 521

Meanings and Beliefs 522

Personality Factors and Social Support 523

APPLYING PSYCHOLOGICAL SCIENCE Psychological Techniques for Controlling Pain and Suffering 523

HEALTH PROMOTION AND ILLNESS PREVENTION 526

How People Change: The Transtheoretical Model 526

Increasing Behaviors That Enhance Health 528

Exercise 529

Weight Control 530

Lifestyle Changes and Medical Recovery 530

Reducing Behaviors That Impair Health 531

Psychology and the AIDS Crisis 531

Combating Substance Abuse 532

Motivational Interviewing 533
 Multimodal Treatment Approaches 533
BENEATH THE SURFACE College-Age Drinking: Harmless Fun or
 Russian Roulette? 534

Harm-Reduction Approaches to Prevention 535
 Relapse Prevention: Maintaining Positive Behavior Change 535
 A Concluding Thought 537

CHAPTER 15

Psychological Disorders 539



HISTORICAL PERSPECTIVES ON DEVIANT BEHAVIOR 541

DEFINING AND CLASSIFYING PSYCHOLOGICAL DISORDERS 543

What Is “Abnormal”? 543
 Diagnosing Psychological Disorders 544
 Consequences of Diagnostic Labeling 545

Social and Personal Consequences 545

Legal Consequences 545

WHAT DO YOU THINK? “Do I Have That Disorder?” 546

ANXIETY DISORDERS 546

Phobic Disorder 547
 Generalized Anxiety Disorder 547
 Panic Disorder 548
 Obsessive-Compulsive Disorder 549
 Posttraumatic Stress Disorder 549

WHAT DO YOU THINK? Growth from Trauma? 550

Causal Factors in Anxiety Disorders 550

Biological Factors 550

Psychological Factors 551

Psychodynamic Theories 551

Cognitive Factors 551

The Role of Learning 552

Sociocultural Factors 552

SOMATOFORM AND DISSOCIATIVE DISORDERS:

ANXIETY INFERRED 554

Somatoform Disorders 554

Dissociative Disorders 555

Dissociative Identity (Multiple Personality) Disorder 555

What Causes DID? 556

MOOD DISORDERS 556

Depression 556
 Bipolar Disorder 557
 Prevalence and Course of Mood Disorders 558

Causal Factors in Mood Disorders 559

Biological Factors 559

Psychological Factors 560

Personality-Based Vulnerability 560

Cognitive Processes 560

Learning and Environmental Factors 561

Sociocultural Factors 562

APPLYING PSYCHOLOGICAL SCIENCE Understanding and Preventing
 Suicide 562

SCHIZOPHRENIA 564

Characteristics of Schizophrenia 564

Subtypes of Schizophrenia 565

Causal Factors in Schizophrenia 566

Biological Factors 566

Genetic Predisposition 566

Brain Abnormalities 567

Biochemical Factors 567

Psychological Factors 567

Environmental Factors 568

Sociocultural Factors 569

PERSONALITY DISORDERS 570

Antisocial Personality Disorder 570

Causal Factors 572

Biological Factors 572

Psychological and Environmental Factors 572

RESEARCH CLOSE-UP Fear, Avoidance Learning, and
 Psychopathy 573

Borderline Personality Disorder 575

Causal Factors 575

BENEATH THE SURFACE How Dangerous Are People with
 Psychological Disorders? 576

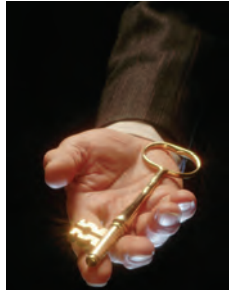
CHILDHOOD DISORDERS 578

Attention Deficit/Hyperactivity Disorder 578

Autistic Disorder 578

Causal Factors 579

A Closing Thought 580

CHAPTER 16**Treatment of Psychological Disorders 582****PSYCHOLOGICAL TREATMENTS 583****PSYCHODYNAMIC THERAPIES 584**

Psychoanalysis 585

Free Association 585

Dream Interpretation 585

Resistance 586

Transference 586

Interpretation 586

Brief Psychodynamic and Interpersonal Therapies 587

HUMANISTIC PSYCHOTHERAPIES 588

Person-Centered Therapy 588

Gestalt Therapy 589

COGNITIVE THERAPIES 590

Ellis's Rational-Emotive Therapy 590

Beck's Cognitive Therapy 591

BEHAVIOR THERAPIES 592

Exposure: An Extinction Approach 592

Systematic Desensitization: A Counterconditioning Approach 593

Aversion Therapy 594

Operant Conditioning Treatments 595

Positive Reinforcement Techniques 595

Therapeutic Application of Punishment 596

Behavioral Activation Therapy 596

Modeling and Social Skills Training 597

INTEGRATING AND COMBINING THERAPIES 597**GROUP, FAMILY, AND MARITAL THERAPIES 598**

Family Therapy 599

Marital Therapy 599

CULTURAL AND GENDER ISSUES IN PSYCHOTHERAPY 600

Cultural Factors in Treatment Utilization 600

Gender Issues in Therapy 601

EVALUATING PSYCHOTHERAPIES 602

Eysenck's Great Challenge 602

Psychotherapy Research Methods 603

Survey Research 603

WHAT DO YOU THINK? Do Survey Results Provide an Accurate Picture of Treatment Effectiveness? 604

Randomized Clinical Trials 604

Empirically Supported Treatments 605

The Search for Therapeutic Principles 605

Meta-Analysis: A Look at the Big Picture 605

Factors Affecting the Outcome of Therapy 606

Client Variables 606

Therapist and Technique Variables 606

Common Factors 607

BIOLOGICAL APPROACHES TO TREATMENT 608

Drug Therapies 608

Antipsychotic Drugs 608

Antianxiety Drugs 609

Antidepressant Drugs 609

BENEATH THE SURFACE Some Depressing Facts about Antidepressant Drugs 610

Electroconvulsive Therapy 611

Psychosurgery 612

Mind, Body, and Therapeutic Interventions 612

RESEARCH CLOSE-UP Drugs versus Psychological Treatments for Depression: A Randomized Clinical Trial 614

PSYCHOLOGICAL DISORDERS AND SOCIETY 616

Deinstitutionalization 616

Mental Health Treatment in a Managed-Care Environment 617

Preventive Mental Health 618

APPLYING PSYCHOLOGICAL SCIENCE When and Where to Seek Therapy 620

CHAPTER 17

Social Thinking and Behavior 623



SOCIAL THINKING 624

Attribution: Perceiving the Causes of Behavior 624

Personal versus Situational Attributions 625

Attributional Biases 625

Culture and Attribution 626

Forming and Maintaining Impressions 627

How Important Are First Impressions? 627

Seeing What We Expect to See 627

Creating What We Expect to See 628

Attitudes and Attitude Change 628

Do Our Attitudes Influence Our Behavior? 628

Does Our Behavior Influence Our Attitudes? 629

Cognitive Dissonance 629

Self-Perception 630

Persuasion 631

The Communicator 631

The Message 632

The Audience 632

SOCIAL INFLUENCE 633

Norms, Conformity, and Obedience 633

Norm Formation and Culture 633

Why Do People Conform? 634

Factors That Affect Conformity 635

Minority Influence 636

Obedience to Authority 636

RESEARCH CLOSE-UP The Dilemma of Obedience: When Conscience Confronts Malevolent Authority 636

Factors That Influence Obedience 638

Would People Obey Today? 639

WHAT DO YOU THINK? Do Women Differ from Men in Obedience? 639

Lessons Learned 639

Detecting and Resisting Compliance Techniques 640

Behavior in Groups 641

Social Loafing 641

Group Polarization 641

Groupthink 642

Deindividuation 643

SOCIAL RELATIONS 644

Attraction: Liking and Loving Others 644

Initial Attraction: Proximity, Mere Exposure, and Similarity 644

Spellbound by Beauty 645

Affiliating with Beautiful People 645

Facial Attractiveness: Is “Average” Beautiful? 645

As Attraction Deepens: Close Relationships 646

Sociocultural and Evolutionary Views 647

Love 648

APPLYING PSYCHOLOGICAL SCIENCE Making Close Relationships Work: Lessons from Psychological Research 648

Ostracism: Rejection Hurts 650

Prejudice: Bias against Others 650

Explicit and Implicit Prejudice 651

Cognitive Roots of Prejudice 651

Categorization and “Us–Them” Thinking 652

Stereotypes and Attributional Distortions 652

Motivational Roots of Prejudice 652

Competition and Conflict 652

Enhancing Self-Esteem 652

How Prejudice Confirms Itself 653

Reducing Prejudice 654

An Educational Approach to Reducing Stereotype Threat 654

Promoting Equal Status Contact to Reduce Prejudice 654

Using Simulations to Reduce “Shooter Bias” 655

Prosocial Behavior: Helping Others 656

Why Do People Help? 656

Evolution and Prosocial Behavior 656

Social Learning and Cultural Influences 656

Empathy and Altruism 656

WHAT DO YOU THINK? Does Pure Altruism Really Exist? 657

When Do People Help? 657

Whom Do People Help? 658

Increasing Prosocial Behavior 658

Aggression: Harming Others 658

Biological Factors in Aggression 658

Environmental Stimuli and Learning 659

Psychological Factors in Aggression 659

Media (and Video Game) Violence: Catharsis versus Social Learning 660

BENEATH THE SURFACE Do Violent Video Games Promote Aggression? 662

A Final Word 663

APPENDIX: STATISTICS IN PSYCHOLOGY A-1

CREDITS C-1

GLOSSARY G-1

REFERENCES R-1

NAME INDEX NI-1

SUBJECT INDEX SI-1