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# Psychology

Kenneth Carter  
Colleen M. Seifert

Revised First Edition



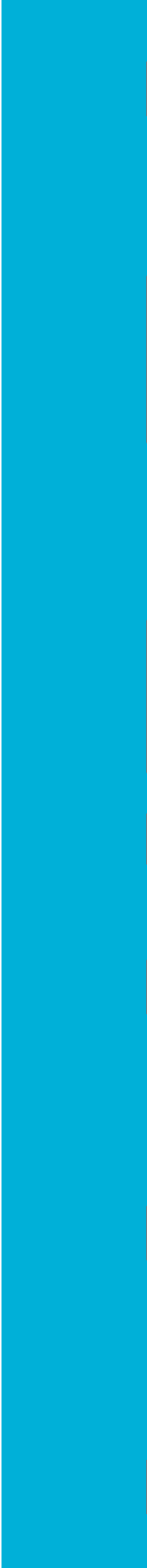
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# Psychology

Revised First Edition







# Psychology

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# Brief Contents

<b>CHAPTER 1</b>	Psychology: An Overview . . . . .	2
<b>CHAPTER 2</b>	A Scientific Approach to Psychology . . . . .	30
<b>CHAPTER 3</b>	Neuroscience: The Biology of Behavior . . . . .	74
<b>CHAPTER 4</b>	Sensation and Perception . . . . .	110
<b>CHAPTER 5</b>	States of Consciousness . . . . .	152
<b>CHAPTER 6</b>	Learning . . . . .	184
<b>CHAPTER 7</b>	Memory . . . . .	224
<b>CHAPTER 8</b>	Thinking and Language . . . . .	276
<b>CHAPTER 9</b>	Intelligence . . . . .	316
<b>CHAPTER 10</b>	Motivation . . . . .	360
<b>CHAPTER 11</b>	Emotion, Stress, and Health . . . . .	416
<b>CHAPTER 12</b>	Development Throughout the Life Span . . . . .	450
<b>CHAPTER 13</b>	Personality . . . . .	504
<b>CHAPTER 14</b>	Psychological Disorders . . . . .	536
<b>CHAPTER 15</b>	Therapies for Psychological Disorders . . . . .	578
<b>CHAPTER 16</b>	Social Psychology . . . . .	614

# Contents

Preface xviii  
 Acknowledgments xxv  
 About the Authors xxvii



<b>CHAPTER 1</b>	<b>Psychology: An Overview</b> . . . . .	<b>2</b>
<b>1.1</b>	<b>The Science of Psychology</b> . . . . .	<b>5</b>
	CONCEPT LEARNING CHECK <b>1.1</b> <i>The Scope and Limits of the Science of Psychology</i> 7	
<b>1.2</b>	<b>The Origins and History of Psychology</b> . . . . .	<b>8</b>
	Philosophical Roots 9	
	Biological Roots 9	
	Schools of Thought: Structuralism vs. Functionalism 10	
	CONCEPT LEARNING CHECK <b>1.2</b> <i>Comparing and Contrasting Structuralism and Functionalism</i> 12	
<b>1.3</b>	<b>Contemporary Psychology</b> . . . . .	<b>13</b>
	The Biological Perspective 14	
	The Evolutionary Perspective 14	
	The Psychodynamic Perspective 15	
	The Behavioral Perspective 16	
	The Humanistic Perspective 16	
	The Cognitive Perspective 16	
	The Sociocultural Perspective 16	
	Professional Specialization and Research Areas in Psychology 17	
	CONCEPT LEARNING CHECK <b>1.3</b> <i>Contemporary Perspectives and Settings in Psychology</i> 19	
<b>1.4</b>	<b>Critical Thinking and Multiple Influences</b> . . . . .	<b>19</b>
	Critical Thinking 19	
	The Importance of Multiple Influences 20	
	<b>CRITICAL THINKING APPLICATION</b> 21	
	Summary of Multiple Influences on Psychology 21	
	CONCEPT LEARNING CHECK <b>1.4</b> <i>Applying the Criteria of Critical Thinking</i> 23	
	<b>VISUAL OVERVIEW: MULTIPLE PERSPECTIVES</b> 24	
	<i>Visual Summary of Psychology: An Overview</i> 25	
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 26	
<b>CHAPTER 2</b>	<b>A Scientific Approach to Psychology</b> . . . . .	<b>30</b>
<b>2.1</b>	<b>Psychological Investigation</b> . . . . .	<b>32</b>
	The Scientific Method in Psychology 33	
	Why Is the Scientific Method Important? 35	
	CONCEPT LEARNING CHECK <b>2.1</b> <i>Within or Between?</i> 36	
<b>2.2</b>	<b>Descriptive Research</b> . . . . .	<b>37</b>
	Naturalistic Observation 37	
	Case Studies 38	
	Surveys 39	
	Correlational Studies 41	
	CONCEPT LEARNING CHECK <b>2.2</b> <i>What Do Correlations Mean?</i> 46	
<b>2.3</b>	<b>Experimental Research</b> . . . . .	<b>46</b>
	CONCEPT LEARNING CHECK <b>2.3</b> <i>Designing an Experiment</i> 51	
<b>2.4</b>	<b>Statistical Analysis</b> . . . . .	<b>51</b>
	Measures of Central Tendency and Variance 52	
	Making Inferences with Statistics 55	
	CONCEPT LEARNING CHECK <b>2.4</b> <i>Summarizing with Statistics</i> 56	
<b>2.5</b>	<b>Ethics in Psychological Research</b> . . . . .	<b>56</b>
	Human Participants 57	
	Animal Studies 59	
	Summary of Multiple Influences on a Scientific Approach to Psychology 61	
	CONCEPT LEARNING CHECK <b>2.5</b> <i>Ethics in Psychological Studies</i> 61	
	<b>CRITICAL THINKING APPLICATION</b> 62	
	<b>VISUAL OVERVIEW: SAMPLING FROM A POPULATION FOR SCIENTIFIC STUDY</b> 64	



Visual Summary of A Scientific Approach to Psychology 65

Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 67

**CHAPTER 3 Neuroscience: The Biology of Behavior . . . . .74**

**3.1 Overview: The Components of Biological Bases of Behavior . . . . .76**

CONCEPT LEARNING CHECK **3.1** *Reviewing the Terminology of Neuroscience* 77

**3.2 Neural Communication . . . . .77**

Glia 78

Neurons 78

Neural Networks 82

Multitasking Neurotransmitters 83

CONCEPT LEARNING CHECK **3.2** *Recognizing the Parts of the Neuron* 84

**3.3 Nervous System Organization . . . . .84**

Peripheral Nervous System 84

Central Nervous System 85

CONCEPT LEARNING CHECK **3.3** *The Organization of the Nervous System* 86

**3.4 The Brain . . . . .86**

Organization 86

Research on the Brain 86

The Brainstem 87

Midbrain 89

Forebrain 89

Plasticity 93

CONCEPT LEARNING CHECK **3.4** *Identifying the Structures and Functions in the Brain* 94

**3.5 The Endocrine System . . . . .94**

Endorphins 95

Adrenal Glands 95

Gonads 95

CONCEPT LEARNING CHECK **3.5** *Identifying the Role of Endorphins and the Endocrine System Functions* 96

**3.6 Genetics . . . . .96**

The Basic Concepts of Genetics 96

The Research Methods of Genetics 98

Summary of Multiple Influences on the Biology of Behavior 100

CONCEPT LEARNING CHECK **3.6** *Reviewing the Role of Genetics in Psychology* 100

CRITICAL THINKING APPLICATION 101

VISUAL OVERVIEW: NERVOUS SYSTEM 102

Visual Summary of Neuroscience: The Biology of Behavior 103

Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 105



**CHAPTER 4 Sensation and Perception . . . . .110**

**4.1 The Interaction of Sensation and Perception . . . . .112**

CONCEPT LEARNING CHECK **4.1** *Comparing Top-Down and Bottom-Up Processing* 114

**4.2 Sensory Principles . . . . .114**

Transduction of Physical Energy into Neural Stimulation 115

Detection Thresholds Reflect Sensitivity 115

Sensory Adaptation 117

CONCEPT LEARNING CHECK **4.2** *Testing Sensory Thresholds* 118

**4.3 The Five Major Senses . . . . .118**

The Sense of Vision 119

The Sense of Hearing 123

The Sense of Smell 124

The Sense of Taste 125

The Sense of Touch 127

CONCEPT LEARNING CHECK **4.3** *Methods of Sensory Transduction* 129

CRITICAL THINKING APPLICATION 129



<b>4.4</b>	<b>Perception Organizes Sensations</b> .....	<b>130</b>
	Form and Pattern Perception 130	
	Gestalt Organizing Principles 131	
	Depth Perception 133	
	Perception of Motion 134	
	Perceptual Constancy 135	
	CONCEPT LEARNING CHECK <b>4.4</b> <i>Perceptual Organization Principles</i> 136	
<b>4.5</b>	<b>Experience and Perception</b> .....	<b>137</b>
	Development 137	
	Learning 137	
	Culture 138	
	CONCEPT LEARNING CHECK <b>4.5</b> <i>The Role of Experience in Perception</i> 140	
<b>4.6</b>	<b>The Role of Attention</b> .....	<b>140</b>
	Selective Attention 140	
	Divided Attention 141	
	Summary of Multiple Influences on Sensation and Perception 142	
	CONCEPT LEARNING CHECK <b>4.6</b> <i>The Role of Attention in Perception</i> 142	
	<b>VISUAL OVERVIEW: TRANSDUCTION FROM PHYSICAL ENERGY TO NEURAL SIGNALS</b> 143	
	<i>Visual Summary of Sensation and Perception</i> 144	
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 146	
<b>CHAPTER 5</b>	<b>States of Consciousness</b> .....	<b>152</b>
<b>5.1</b>	<b>Overview: Consciousness, Brain Activity, Levels of Awareness</b> ...	<b>154</b>
	CONCEPT LEARNING CHECK <b>5.1</b> <i>Consciousness and Psychology</i> 155	
<b>5.2</b>	<b>Sleep</b> .....	<b>155</b>
	Biological Rhythms and Stages of Sleep 156	
	Sleep Theories 157	
	Effects of Sleep Deprivation 158	
	Sleep Disorders 158	
	CONCEPT LEARNING CHECK <b>5.2</b> <i>Stages of Sleep</i> 162	
<b>5.3</b>	<b>Dreams</b> .....	<b>162</b>
	Theories of Dreams 162	
	<b>CRITICAL THINKING APPLICATION</b> 163	
	Dream Contents 164	
	CONCEPT LEARNING CHECK <b>5.3</b> <i>Theories of Dreams</i> 165	
<b>5.4</b>	<b>Hypnosis</b> .....	<b>165</b>
	Critical Thinking About Hypnosis 165	
	Theories of Hypnosis 166	
	CONCEPT LEARNING CHECK <b>5.4</b> <i>Theories of Hypnosis</i> 167	
<b>5.5</b>	<b>Meditation</b> .....	<b>167</b>
	Meditation Defined 167	
	Effects and Benefits of Meditation 167	
	CONCEPT LEARNING CHECK <b>5.5</b> <i>The Effects and Benefits of Meditation</i> 168	
<b>5.6</b>	<b>Drug Use</b> .....	<b>168</b>
	Mechanism of Action of Psychoactive Drugs 171	
	Depressants 171	
	Stimulants 172	
	Hallucinogens 173	
	Summary of Multiple Influences on Consciousness 174	
	CONCEPT LEARNING CHECK <b>5.6</b> <i>The Effects of Psychoactive Drugs</i> 175	
	<b>VISUAL OVERVIEW: SLEEP CYCLES</b> 176	
	<i>Visual Summary of States of Consciousness</i> 177	
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 179	
<b>CHAPTER 6</b>	<b>Learning</b> .....	<b>184</b>
<b>6.1</b>	<b>How We Learn</b> .....	<b>186</b>
	CONCEPT LEARNING CHECK <b>6.1</b> <i>Comparing Types of Learning</i> 188	
<b>6.2</b>	<b>Classical Conditioning</b> .....	<b>188</b>



Pavlov's Experiments 189  
 Review of Terminology, Processes, and Factors That Affect Classical Conditioning 192  
 Conditioning and Emotional Responses 192  
 Contemporary Views of Classical Conditioning 194  
 Applying Principles of Classical Conditioning 196  
 CONCEPT LEARNING CHECK **6.2** *Applying Principles of Classical Conditioning* 197

**6.3 Operant Conditioning** ..... 198  
 Thorndike's Law of Effect 198  
 Skinner's Experiments 198  
 Punishment 203  
 Review of Terminology, Processes, and Factors That Affect Operant Conditioning 204  
 Contemporary Views of Operant Conditioning 205  
 Applying Principles of Operant Conditioning 207  
 CONCEPT LEARNING CHECK **6.3** *Comparing Consequences of Behavior* 208

**6.4 A Cognitive Approach: Observational Learning** ..... 208  
 CRITICAL THINKING APPLICATION 209  
 Tolman's Latent Learning 209  
 Bandura's Social-Cognitive Learning Theory 210  
 Summary of Multiple Influences on Learning 213  
 CONCEPT LEARNING CHECK **6.4** *Learning by Observing* 214  
 VISUAL OVERVIEW: THREE TYPES OF LEARNING 215  
 Visual Summary of Learning 216  
 Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 218

**CHAPTER 7 Memory** ..... 224

**7.1 Overview: What is Memory?** ..... 226  
 CONCEPT LEARNING CHECK **7.1** *Defining Memory* 227

**7.2 Constructing Memory** ..... 227  
 Automatic Processing 227  
 Effortful Processing 229  
 Mnemonics 232  
 CONCEPT LEARNING CHECK **7.2** *Applying Methods of Encoding* 233

**7.3 The Three Stages of Memory** ..... 233  
 Sensory Memory 234  
 Short-Term Memory or Working Memory 234  
 Long-Term Memory 238  
 Storing Memories in the Brain 239  
 CONCEPT LEARNING CHECK **7.3** *Movement of Information Through the Stages of Memory* 240

<b>7.4</b>	<b>Organizing Information in Memory</b> .....	<b>240</b>
	Declarative Memory 242	
	Procedural Memory 247	
	CONCEPT LEARNING CHECK <b>7.4</b> <i>Organizing Information in Memory</i> 248	
<b>7.5</b>	<b>Retrieval from Memory</b> .....	<b>248</b>
	Retrieval Cues 248	
	Adding Context 250	
	Retrieval Practice 251	
	CONCEPT LEARNING CHECK <b>7.5</b> <i>Practicing Retrieval</i> 251	
<b>7.6</b>	<b>Reconstructing Memories</b> .....	<b>252</b>
	Source Monitoring 252	
	The Misinformation Effect 252	
	False Memories 254	
	CONCEPT LEARNING CHECK <b>7.6</b> <i>Introducing Error in Memory</i> 256	
	<b>CRITICAL THINKING APPLICATION</b> 256	
<b>7.7</b>	<b>Forgetting</b> .....	<b>257</b>
	Measures of Forgetting 257	
	Theories of Forgetting 259	
	Motivated Forgetting 260	
	Amnesia 261	
	CONCEPT LEARNING CHECK <b>7.7</b> <i>Learning from Case Studies of Amnesia</i> 262	
<b>7.8</b>	<b>How to Improve Your Memory</b> .....	<b>263</b>
	Memory Principles Applied to Studying 263	
	Summary of Multiple Influences on Memory 264	
	CONCEPT LEARNING CHECK <b>7.8</b> <i>Developing Helpful Study Habits</i> 265	
	<b>VISUAL OVERVIEW: TYPES OF KNOWLEDGE IN MEMORY</b> 266	
	<i>Visual Summary of Memory</i> 267	
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 269	
<b>CHAPTER 8</b>	<b>Thinking and Language</b> .....	<b>276</b>
<b>8.1</b>	<b>Overview: What Is Thinking?</b> .....	<b>278</b>
	CONCEPT LEARNING CHECK <b>8.1</b> <i>Defining Thinking</i> 281	
<b>8.2</b>	<b>Problem Solving</b> .....	<b>281</b>
	Problem-Solving Methods 281	
	Biases in Problem Solving 284	
	Expertise 286	
	CONCEPT LEARNING CHECK <b>8.2</b> <i>Applying Methods of Problem Solving</i> 286	
<b>8.3</b>	<b>Decision Making</b> .....	<b>286</b>
	Algorithms in Decision Making 287	
	Heuristics in Decision Making 287	
	<b>CRITICAL THINKING APPLICATION</b> 289	
	CONCEPT LEARNING CHECK <b>8.3</b> <i>Recognizing Heuristics in Decision Making</i> 290	
<b>8.4</b>	<b>Reasoning</b> .....	<b>290</b>
	Algorithms in Reasoning 290	
	Biases in Reasoning 292	
	CONCEPT LEARNING CHECK <b>8.4</b> <i>Practicing Reasoning</i> 294	
<b>8.5</b>	<b>Language</b> .....	<b>294</b>
	What Is a “Language”? 294	
	Language Structure 294	
	Language Development 296	
	Theories of Language Acquisition 297	
	Language in Animals 298	
	CONCEPT LEARNING CHECK <b>8.5</b> <i>Features of Language</i> 299	
<b>8.6</b>	<b>Brain, Language, and Culture</b> .....	<b>300</b>



Summary of Multiple Influences on Thinking and Language 302  
 CONCEPT LEARNING CHECK **8.6** *Multiple Influences on Language Use* 304  
**VISUAL OVERVIEW: TYPES OF THINKING PROCESSES** 305  
*Visual Summary of Thinking and Language* 306  
 Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key  
 Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test •  
 References 309

**CHAPTER 9 Intelligence . . . . .316**

**9.1 The Nature of Intelligence . . . . .318**  
 Defining Intelligence 318  
 Theories of Intelligence 319  
**CRITICAL THINKING APPLICATION** 323  
 The Brain and Intelligence 324  
 CONCEPT LEARNING CHECK **9.1** *Comparing Theories of Intelligence* 326

**9.2 Measuring Intelligence . . . . .327**  
 The Development of Intelligence Testing 327  
 Principles of Test Construction 330  
 CONCEPT LEARNING CHECK **9.2** *Understanding What Scores Mean* 336

**9.3 Individual Differences in Intelligence . . . . .336**  
 Intellectual Disability 336  
 High Intellectual Ability 338  
 CONCEPT LEARNING CHECK **9.3** *Varieties of Intelligence* 340

**9.4 Group Differences in Intelligence . . . . .340**  
 Differences Within Groups and Differences Between Groups 340  
 Bias in Intelligence Testing 343  
 CONCEPT LEARNING CHECK **9.4** *Expecting to Be Smarter* 346

**9.5 Multiple Influences: The Roles of Genetics and Environment in  
 Determining Intelligence . . . . .346**  
 Evidence for Heredity 347  
 Evidence for Environmental Influence 347  
 Summary of Multiple Influences on Intelligence 350  
 CONCEPT LEARNING CHECK **9.5** *Understanding the Evidence on the Heredity-Environment  
 Question* 350  
**VISUAL OVERVIEW: STEPS IN CREATING AN INTELLIGENCE TEST** 351  
*Visual Summary of Intelligence* 352  
 Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key  
 Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test •  
 References 354

**CHAPTER 10 Motivation . . . . .360**

**10.1 Motivational Theories . . . . .362**  
 Instinct Theories 362  
 Evolutionary Theories 363  
 Drive Theories 363  
 Arousal Theories 364  
 Incentive Theories 365  
 Hierarchical Theories 366  
 CONCEPT LEARNING CHECK **10.1** *Theories of Motivation* 367





<b>10.2</b>	<b>Motivation of Hunger</b> . . . . .	<b>368</b>
	The Physiology and Regulation of Hunger 368	
	Environmental Influences 373	
	Hunger, Eating, and Weight 374	
	A Comparison: Motivation of Thirst 378	
	CONCEPT LEARNING CHECK <b>10.2</b> <i>Eating Disorder or Disordered Eating?</i> 378	
	CRITICAL THINKING APPLICATION 379	
<b>10.3</b>	<b>Sexual Motivation</b> . . . . .	<b>380</b>
	Physiology of Sexual Response 381	
	Gender Norms in Sexual Motivation 382	
	Evolutionary Theories of Mating 384	
	Sexual Orientation 387	
	CONCEPT LEARNING CHECK <b>10.3</b> <i>Evolution and Gender Differences</i> 390	
<b>10.4</b>	<b>Social Motivations</b> . . . . .	<b>390</b>
	Motivation to Belong 390	
	Motivation to Achieve 392	
	Motivation for Self-actualization 393	
	CONCEPT LEARNING CHECK <b>10.4</b> <i>Fostering Achievement</i> 394	
<b>10.5</b>	<b>Motivation and Work</b> . . . . .	<b>394</b>
	Personnel Psychology 395	
	Organizational Psychology 397	
	Career Directions 400	
	Summary of Multiple Influences on Motivation 403	
	CONCEPT LEARNING CHECK <b>10.5</b> <i>What “Works” at Work?</i> 404	
	VISUAL OVERVIEW: MOTIVATION: SOURCES OF HUNGER 405	
	<i>Visual Summary of Motivation</i> 406	
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 408	
<b>CHAPTER 11</b>	<b>Emotion, Stress, and Health</b> . . . . .	<b>416</b>
<b>11.1</b>	<b>The Role of Physiology and Evolution in Emotion</b> . . . . .	<b>418</b>
	The Role of Physiology in Emotion 418	
	The Role of Evolution in Emotion 421	
	CONCEPT LEARNING CHECK <b>11.1</b> <i>Bodily Processes and Emotion</i> 421	
<b>11.2</b>	<b>The Role of Behavior and Cognition in Emotion</b> . . . . .	<b>422</b>
	The Role of Behavior in Emotion 422	
	CONCEPT LEARNING CHECK <b>11.2</b> <i>Behavior and Cognition and Emotion</i> 425	
<b>11.3</b>	<b>Theories of Emotion</b> . . . . .	<b>425</b>
	Common-Sense Theory 425	
	James-Lange Peripheral Feedback Theory 425	
	Cannon-Bard Simultaneous Trigger Theory 426	
	Schacter-Singer Two-Factor Theory of Emotion 426	
	Cognitive-Mediational Theory of Emotion 428	
	CONCEPT LEARNING CHECK <b>11.3</b> <i>Theories of Emotion</i> 428	
<b>11.4</b>	<b>Expressing Emotion</b> . . . . .	<b>428</b>
	Culture and Emotion 428	





Gender and Emotion 429  
 Fear 429  
 Anger and Aggression 429  
 Love 430  
 CONCEPT LEARNING CHECK **11.4** *Expressing Emotion* 431

**11.5 Stress . . . . . 432**

What Is Stress? 432  
 Sources of Stress 432  
 Cognition and Stress 434  
 Choice as a Stress 435  
 Culture and Stress 435  
 Effects of Stress 436  
 Stress and Health 436  
 Coping with and Managing Stress 437  
 Interventions 437

CONCEPT LEARNING CHECK **11.5** *Sources and Effects of Stress* 438

**11.6 Positive Psychology . . . . . 438**

Happiness 438  
 Hardiness 439  
 Optimism 440  
 Summary of Multiple Influences on Emotion, Stress, and Health 441

CONCEPT LEARNING CHECK **11.6** *Positive Psychology* 441

CRITICAL THINKING APPLICATION 441

VISUAL OVERVIEW: THEORIES OF EMOTION 442

*Visual Summary of Emotion, Stress, and Health* 443

Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 445

**CHAPTER 12 Development Throughout the Life Span . . . . . 450**

**12.1 The Beginnings of Development . . . . . 452**

What Is Development? 452  
 Prenatal Development 453  
 The Newborn 456

CONCEPT LEARNING CHECK **12.1** *Before and After Birth* 457

**12.2 Infancy and Childhood . . . . . 457**

Physical Development 458  
 Cognitive Development 461  
 Social Development 465

CONCEPT LEARNING CHECK **12.2** *Stages of Cognitive Development* 472

**12.3 Adolescence and Young Adulthood . . . . . 472**

Physical Development 473  
 Cognitive Development 475

	Social Development	476
	CONCEPT LEARNING CHECK <b>12.3</b> <i>Defining Adolescence</i>	478
	Critical Thinking Application	478
<b>12.4</b>	<b>Adulthood and Aging</b>	<b>479</b>
	Physical Development	479
	Cognitive Development	481
	Social Development	483
	CONCEPT LEARNING CHECK <b>12.4</b> <i>Is There a “Right Time” for Everything?</i>	486
<b>12.5</b>	<b>Nature and Nurture</b>	<b>486</b>
	Summary of Multiple Influences on Development	488
	CONCEPT LEARNING CHECK <b>12.5</b> <i>Nature or Nurture?</i>	489
	VISUAL OVERVIEW: STAGES OF DEVELOPMENT ACROSS THE LIFESPAN	490
	<i>Visual Summary of Development Throughout the Life Span</i>	491
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References	493
<b>CHAPTER 13</b>	<b>Personality</b>	<b>504</b>
<b>13.1</b>	<b>Defining Personality</b>	<b>506</b>
	CONCEPT LEARNING CHECK <b>13.1</b> <i>Describing Personality Theories</i>	507
<b>13.2</b>	<b>The Psychoanalytic Perspective</b>	<b>507</b>
	The Nature of the Psychoanalytic Perspective	507
	Freud’s Psychoanalytic Theory	508
	Jung’s Analytical Psychology	511
	Adler’s Individual Psychology	513
	Evaluating the Psychoanalytic Perspective—Is Freud in Error?	513
	CONCEPT LEARNING CHECK <b>13.2</b> <i>Comparing the Psychoanalytic Perspectives</i>	514
<b>13.3</b>	<b>The Humanistic Perspective</b>	<b>514</b>
	Rogers’s Person-Centered Perspective	514
	Maslow’s Theory of Self-actualization	515
	Evaluating the Humanistic Perspectives	516
	CONCEPT LEARNING CHECK <b>13.3</b> <i>Illustrating the Humanistic Perspective</i>	516
<b>13.4</b>	<b>Trait Perspectives</b>	<b>517</b>
	Factor Analysis	517
	The Big Five Factors	517
	Assessing Traits	518
	Evaluating the Trait Perspective	518
	CONCEPT LEARNING CHECK <b>13.4</b> <i>Identifying the Big Five Traits</i>	518
<b>13.5</b>	<b>The Social Cognitive Perspective</b>	<b>519</b>
	Bandura’s Social Cognitive Theory	519
	Mischel’s Social Cognitive Theory	520
	Evaluating the Social Cognitive Perspective	521
	CONCEPT LEARNING CHECK <b>13.5</b> <i>Comparing Social Cognitive Perspectives</i>	521
<b>13.6</b>	<b>The Biological Perspective</b>	<b>521</b>
	Eysenck’s Theory	522
	Genetics and Personality	523
	Evolutionary Theories of Personality	523
	Explain	524
	Evaluating the Biological Perspective	524
	CONCEPT LEARNING CHECK <b>13.6</b> <i>Understanding the Biological Perspective</i>	524
<b>13.7</b>	<b>Personality Assessment</b>	<b>524</b>
	CONCEPT LEARNING CHECK <b>13.7</b> <i>Identifying Personality Assessments</i>	526
<b>13.8</b>	<b>Culture and Personality</b>	<b>526</b>
	Summary of Multiple Influences on Personality	527
	CONCEPT LEARNING CHECK <b>13.8</b> <i>Examining Culture and Personality</i>	527
	CRITICAL THINKING APPLICATION	527
	VISUAL OVERVIEW: THE MAJOR THEORIES OF PERSONALITY, THEORISTS, AND CONCEPTS	528
	<i>Visual Summary of Personality</i>	529
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References	531



<b>CHAPTER 14</b>	<b>Psychological Disorders</b> . . . . .	<b>536</b>
<b>14.1</b>	<b>Overview: Understanding Psychological Disorders</b> . . . . .	<b>538</b>
	Defining Psychological Disorders	538
	Criteria of Abnormal Behavior	539
	Classifying and Labeling Psychological Disorders	540
	Etiology of Psychological Disorders	542
	CONCEPT LEARNING CHECK <b>14.1</b> <i>Identifying Psychological Disorders</i>	544
<b>14.2</b>	<b>Anxiety, Compulsiveness, and Stress Disorders</b> . . . . .	<b>544</b>
	Generalized Anxiety Disorder	544
	Panic Disorder	545
	Phobic Disorders	546
	Obsessive-Compulsive Disorder	547
	Posttraumatic Stress Disorder	549
	Etiology of Anxiety, Compulsiveness, and Stress Disorders	549
	CONCEPT LEARNING CHECK <b>14.2</b> <i>Identifying Anxiety, Compulsiveness, and Stress Disorders</i>	551
<b>14.3</b>	<b>Somatic Symptom and Related Disorders</b> . . . . .	<b>552</b>
	Somatic Symptom Disorder	552
	Conversion Disorder	553
	Illness Anxiety Disorder (Hypochondriasis)	553
	Etiology of Somatic Symptom and Related Disorders	553
	CONCEPT LEARNING CHECK <b>14.3</b> <i>Identifying Somatic Symptom and Related Disorders</i>	554
<b>14.4</b>	<b>Dissociative Disorders</b> . . . . .	<b>554</b>
	Dissociative Amnesia and Fugue	554
	Dissociative Identity Disorder	555
	Etiology of Dissociative Disorders	556
	CONCEPT LEARNING CHECK <b>14.4</b> <i>Identifying Dissociative Disorders</i>	556
<b>14.5</b>	<b>Mood Disorders</b> . . . . .	<b>556</b>
	Major Depressive Disorder	556
	Depression and Bipolar Disorder	557
	Etiology of Mood Disorders	558
	CONCEPT LEARNING CHECK <b>14.5</b> <i>Identifying Mood Disorders</i>	559
<b>14.6</b>	<b>Psychotic Disorders</b> . . . . .	<b>560</b>
	Symptoms of Psychotic Disorders	560
	<b>CRITICAL THINKING APPLICATION</b>	<b>561</b>
	Identifying Schizophrenia	561
	Etiology of Psychotic Disorders	562
	CONCEPT LEARNING CHECK <b>14.6</b> <i>Classifying Signs and Symptoms of Schizophrenia</i>	563
<b>14.7</b>	<b>Personality Disorders</b> . . . . .	<b>564</b>
	Antisocial Personality Disorder	565
	Paranoid Personality Disorder	565
	Borderline Personality Disorder	566
	Summary of Multiple Influences on Psychological Disorders	567
	CONCEPT LEARNING CHECK <b>14.7</b> <i>Categorizing Personality Disorders</i>	567
	<b>VISUAL OVERVIEW: DISTINGUISHING PSYCHOLOGICAL DISORDERS</b>	<b>568</b>
	<i>Visual Summary of Psychological Disorders</i>	569
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References	571





<b>CHAPTER 15</b>	<b>Therapies for Psychological Disorders</b>	<b>578</b>
<b>15.1</b>	<b>Mental Health Practitioners and Settings</b>	<b>580</b>
	Psychiatrists	581
	Counseling and Clinical Psychologists	581
	Master's-Level Therapists	582
	Settings for Mental Health Practitioners	582
	The Role of Psychotherapy	583
	CONCEPT LEARNING CHECK <b>15.1</b> <i>Comparing the Roles and Settings of Mental Health Practitioners</i>	584
<b>15.2</b>	<b>Psychodynamic Therapy</b>	<b>584</b>
	Techniques of Psychodynamic Therapy	584
	Types of Psychodynamic Therapy	586
	Short-Term Psychodynamic Therapy	586
	CONCEPT LEARNING CHECK <b>15.2</b> <i>Understanding Psychodynamic Therapies</i>	586
<b>15.3</b>	<b>Humanistic Therapy</b>	<b>587</b>
	Carl Rogers and Client-Centered Therapy	587
	CONCEPT LEARNING CHECK <b>15.3</b> <i>Describing the Elements of Humanistic Therapy</i>	588
<b>15.4</b>	<b>Behavior Therapy</b>	<b>588</b>
	Classical Conditioning Techniques	588
	Operant Conditioning Techniques	590
	CONCEPT LEARNING CHECK <b>15.4</b> <i>Designing a Behavioral Treatment Plan</i>	590
<b>15.5</b>	<b>Cognitive Therapies</b>	<b>590</b>
	Aaron Beck and Cognitive Therapy	591
	Albert Ellis and Rational Emotive Therapy	591
	CONCEPT LEARNING CHECK <b>15.5</b> <i>Comparing Cognitive Therapies</i>	591
<b>15.6</b>	<b>Family Systems and Group Therapy</b>	<b>592</b>
	Systems Approaches	592
	Group Therapy	592
	CONCEPT LEARNING CHECK <b>15.6</b> <i>Describing an Eclectic Systems Approach</i>	593
<b>15.7</b>	<b>Biomedical Therapies</b>	<b>593</b>
	Drug Treatments	593
	Medical Procedures	599
	CONCEPT LEARNING CHECK <b>15.7</b> <i>Explaining the Use of Medicines for Psychological Conditions</i>	600
<b>15.8</b>	<b>Evaluating Therapies for Psychological Disorders</b>	<b>601</b>
	Effectiveness of Therapies for Psychological Disorders	601
	Effectiveness of Different Therapies	602
	Common Factors That Increase Effectiveness	602
	Culture, Cultural Values, and Psychotherapy	603
	CRITICAL THINKING APPLICATION	603
	Summary of Multiple Influences on Therapies for Psychological Disorders	603
	CONCEPT LEARNING CHECK <b>15.8</b> <i>Summarizing the Factors of Effective Psychotherapy</i>	604
	VISUAL OVERVIEW: COMMON MEDICATIONS USED TO TREAT PSYCHOLOGICAL DISORDERS	605
	<i>Visual Summary of Therapies for Psychological Disorders</i>	606
	Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References	608
<b>CHAPTER 16</b>	<b>Social Psychology</b>	<b>614</b>
<b>16.1</b>	<b>Social Thought and Behavior</b>	<b>617</b>
	Groups	617
	Core Social Motives	618
	CONCEPT LEARNING CHECK <b>16.1</b> <i>Describing Social Roles</i>	618
<b>16.2</b>	<b>Person Perception</b>	<b>619</b>
	Social Categorization	619
	Physical Appearance	619
	Stereotypes	620
	Subjectivity	620
	Culture and Person Perception	620
	CONCEPT LEARNING CHECK <b>16.2</b> <i>Person Perception and Musical Tastes</i>	621
<b>16.3</b>	<b>Attribution: The Person or the Situation?</b>	<b>621</b>
	Fundamental Attribution Error	621
	Actor-Observer Bias	621





Defensive Attribution 622  
 Self-Serving Bias 622  
 CONCEPT LEARNING CHECK **16.3** *Explaining Attributional Biases* 622

**16.4 Attitudes and Social Judgments** .....623  
 Components of Attitudes 623  
 Relieving Cognitive Dissonance 624  
 Influencing Attitudes: Persuasion 624  
 Culture and Attitudes 625  
 CONCEPT LEARNING CHECK **16.4** *Explaining Persuasion* 625

**16.5 Conformity and Obedience** .....626  
 Conformity 626  
 The Power of the Situation: The Stanford Prison Experiment 627  
 Obedience 627  
 CRITICAL THINKING APPLICATION 629  
 CONCEPT LEARNING CHECK **16.5** *Distinguishing Conformity, Obedience, and Compliance* 630

**16.6 Social Interactions** .....630  
 Prejudice 630  
 Aggression 630  
 Factors in Attraction 632  
 CONCEPT LEARNING CHECK **16.6** *Designing for Friendships* 633

**16.7 Group Influence on the Individual** .....633  
 Altruism 634  
 Effects of Group Interaction 635  
 Decision Making 636  
 Groupthink 636  
 Social Loafing 637  
 Social Facilitation 637  
 Deindividuation 637  
 Summary of Multiple Influences on Social Psychology 638  
 CONCEPT LEARNING CHECK **16.7** *Preventing Groupthink* 638  
 VISUAL OVERVIEW: THE CORE SOCIAL MOTIVES 639  
 Visual Summary of Social Psychology 640  
 Chapter Review Test • Chapter Discussion Questions • Chapter Projects • Chapter Key Terms • Answers to Concept Learning Checks • Answers to Chapter Review Test • References 641

Glossary 648  
 Index 663  
 Credits 675

# Welcome

Welcome to *Learn Psychology*! Our goal with *Learn Psychology* is to create content for introductory psychology that establishes a new paradigm for student-centered learning.






*Learn Psychology* is written with the 21st-century student in mind. We have developed a fresh presentation for introductory psychology that is highly interactive, compatible with digital applications, and cognizant of the challenges of an ever-evolving economic landscape. To us, the perfect textbook makes learners want to read it and presents everything they need to know in an easy-to-use format. That's what we've done with *Learn Psychology*. We have drawn on the best practices of educational pedagogy with a “learning by doing” approach that pairs critical analysis of psychological concepts with examples from everyday life and allows readers to actively engage with the curriculum.

## About The Learn Series

*Learn Psychology* is the flagship publication of **The Learn Series**, a completely new course curriculum solution from Jones & Bartlett Learning that aims to provide a fresh, integrated print and digital program solution for general education survey courses. **The Learn Series** is produced with today's “digitally native” students in mind by re-envisioning the learning experience and focusing not just on *what* students learn but also *how* students learn. **The Learn Series** is characterized by authoritative and notable authors; visual, modular design; student-centered pedagogy; and integrated formative and summative assessments that improve learning outcomes—features that allow instructors to easily customize and personalize course curriculum. **The Learn Series** provides the most interactive and advanced curriculum solution for today's student-centered learning environments by emphasizing the skills students need to thrive in the 21st-century knowledge-based economy.

For more information on additional titles in the series, please visit [www.TheLearnSeries.com](http://www.TheLearnSeries.com).

### Skills for the 21st-Century Workforce

	Sample 21st-Century Addressable Workforce Skills			Supporting Pedagogy in <i>The Learn Series</i>
 RESEARCH LITERACY	Able to determine the extent of information needed	Able to evaluate information and its sources critically	Can apply evidence to new problem solutions	Group and individual projects Online writing tutorial included in Navigate
 INTERPERSONAL COMMUNICATION & PUBLIC SPEAKING	Can convey ideas and meaning through oral communication	Able to speak persuasively in a group	Can effectively work in a team structure to solve problems	Group and individual projects Discussion questions Instructor's Resource Curriculum Guide with additional group projects and activities
 PROBLEM SOLVING & CRITICAL ANALYSIS	Able to analyze data Able to synthesize different types of information	Able to evaluate source material for validity, etc.	Able to make decisions based on data	Critical Thinking Applications Short essay questions in Test Bank Interactive exercises in Navigate PAL Psychology
 TECHNOLOGY LITERACY	Able to use the Internet critically	Able to retrieve and manage information via technology	Able to use basic word processing and spreadsheet software/tools	Navigate <i>Learn Psychology</i> Chapter Projects Online activities and assignments
 WRITTEN COMMUNICATION	Able to organize and outline the main topics or thesis	Uses a variety of simple and complex sentences to create a fluid writing style	Able to write complete, grammatically correct sentences	Online Writing Tutorial included in Navigate Short Essay Questions in Assessment Banks

## The Themes and Approach of *Learn Psychology*

The overarching definition of psychology is the science of behavior and mental processes, and the biological, experiential, and sociocultural factors that influence behavior. In *Learn Psychology*, we highlight the multiple influences that affect psychological phenomena. Within each chapter, we explain how biological factors (including genetics, neural process-

ing, hormones, and evolution) combine with environmental factors (such as culture, social context, and experience) to influence psychology. We offer multiple levels of explanation to aid in understanding the “why” of psychology; that is, why do people behave they way they do? In order to understand psychological questions, we must explain the interplay of biological and environmental influences jointly at work in all human behavior.

Each chapter topic is explained in terms of the multiple influences on psychology and concludes with a thought-provoking summary that emphasizes these multiple influences. Learners will see this theme of “multiple influences on psychology” repeated throughout the text, continually underscoring the fact that human psychology has roots in biology, yet is driven by social and cultural context, and that these factors work in concert to explain psychological concepts and questions. Though the field is just beginning to explore how genes and environment interact in development, for example, *Learn Psychology* encourages students to consider multiple influences as explanations for any topic within psychology.

Throughout the book we also emphasize psychological science and explain the methods involved in research. We present state-of-the-art information on psychological topics and the supporting scientific evidence. What we know about psychological phenomena comes from these studies, so it is critical that students learn about the science and the methods. These research discussions require the learner to think critically about conclusions from empirical studies and how results can be applied to behavior in the real world. The scientific foundation includes both classic and recent studies to provide the most accurate, current, and comprehensive coverage possible.

## The Structure of *Learn Psychology*

*Learn Psychology* helps optimize learning through enhanced coverage, study, testing, and review while emphasizing the “doing” that reinforces comprehension. Pedagogical features are designed to provide a preview of the material and ensure key concepts are well understood. Each chapter contains numbered sections, or modules, that address a major concept in the introductory psychology curriculum. These modules are self-contained key content units. Each module has associated learning objectives, preview statement, illustrations, concept learning check, and finally, a summary and test. This modular content unit structure informs the entire *Learn Psychology* program.

All of the content in *Learn Psychology* is highly visual, current, and easy to understand. Visual overviews play to dynamic learning and underscore important points. Our goal with *Learn Psychology* is to present accurate core content rooted in best-in-class pedagogy while avoiding distracting off-topic add-ons. The result is an introductory psychology curriculum that is engaging, consistent, and complete—and which helps students measure their progress at every step.

*Learn Psychology* is fully comprehensive and designed for cutting-edge coursework. By incorporating opportunities for active learning, *Learn Psychology* maximizes teaching productivity, enhances student learning, and addresses the challenges of teaching and learning introductory psychology in fresh, new ways.

## Pedagogical Aids and Features

*Learn Psychology* is based on a modular concept format that provides a clear organization of the key topics pertaining to introductory psychology. With this modular format, digital versions of *Learn Psychology* are also fully customizable, allowing faculty full control over the desired curriculum. For more information on customization options, please visit the publisher website at [www.jblearning.com](http://www.jblearning.com).

This essential textbook covers more than 100 introductory psychology topics and divides them into modules linked with learning objectives, providing students with a structured road map for learning, reviewing, and self-assessment.

Every chapter in *Learn Psychology* is organized with the following structure to help learners engage with the concepts in the textbook as they read:

## Chapter Sections

The modular format dictates that each chapter opens with a series of learning objectives, which reappear whenever a topic is repeated to help guide students' learning. Each chapter contains several numbered sections that address a major topic or concept; sections are largely self-contained units of content instruction. Any element or feature labeled with a section number reflects and is relevant to that section.

## Chapter Overview

Content-specific chapter overviews provide a summary of key chapter concepts and serve as a "master plan" to visually show the scope and sequence of content covered. Students use the Chapter Overviews as a map, to guide them through critical concepts and keep them connected to learning objectives.

The screenshot shows a chapter overview for 'States of Consciousness'. It features a background image of stacked stones and green leaves. The page is divided into several sections:

- 5 States of Consciousness** (Main Title)
- Learning Objectives** (List of 6 objectives)
- 5.1 Overview: Consciousness, Brain Activity, Levels of Awareness** (Section 1)
- 5.2 Sleep: Biological Rhythms and Stages** (Section 2)
- 5.3 Dreams: Theories of Dreams** (Section 3)
- 5.4 Hypnosis** (Section 4)
- 5.5 Meditation** (Section 5)
- 5.6 Drug Use** (Section 6)
- Summary of Multiple Influences on Consciousness** (Summary section)

## Section Preview Statement

Within each section, a preview statement summarizes the content of the section that follows. These preview statements prepare students for the content ahead, providing advance organization during reading.

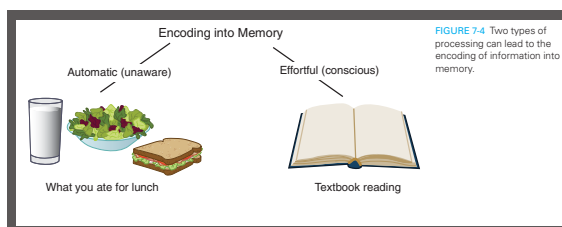
### 14.1 Overview: Understanding Psychological Disorders

Psychologists use a number of different tools to diagnose and understand psychological disorders.

- Define psychological disorders as determined by the American Psychiatric Association (APA) and explain the criteria for abnormal behavior using the *Diagnostic and Statistical Manual of Mental Disorders*.

## Figures and Tables

Figures and tables underscore key points or present complex information. They provide an effective alternative mode of instruction, presented schematically to aid the reader visually and reinforce the text. References to figures are in color to make it easier to locate the figure and pop right back into the reading.



Theorist	Major Concept	Key Points
Charles Spearman (1904)	General intelligence	A single, general intelligence capacity ("g") is the source of all mental abilities.
Louis Thurstone (1938)	Primary mental abilities	Discovered a set of seven different factors related to varied task scores.
Raymond Cattell (1963)	Fluid and crystallized	Discovered just two underlying abilities: fluid intelligence and crystallized intelligence.
Robert Sternberg (1985)	Triarchic theory	Broadened Cattell's concept into three categories of intelligence: analytic, creative, and practical.
Howard Gardner (1983)	Multiple intelligences	Proposed a theory of seven separate intelligence abilities operating independently.
Mayer, Salovey, Caruso, & Sluyter (2001)	Emotional intelligence	The ability to perceive, understand, integrate, and regulate emotions to promote personal growth.

## Concept Learning Check

At the end of every section, a Concept Learning Check is presented to test mastery of the material in that section. These checks focus on “pain points” for students and provide extra coaching on the key concepts in the chapter. This gives learners a chance to apply what they have studied in fresh examples, or to see the material applied from a different perspective.

## Critical Thinking Application

The Critical Thinking Applications within each chapter highlight a challenging or topical concept that asks learners to participate and demonstrate their understanding of the concepts.

## Summary of Multiple Influences in the Chapter

The final section of each chapter ties together the discussion of biological and environmental factors affecting our psychology and highlights the multiple influences on the topic presented.

## Chapter Key Terms

Key Terms appear in blue in the text at point of use and are defined in a way that doesn't interrupt the main idea of the sentence. Key terms are also provided in the margin with sharp definitions that can be used as flashcards. Key terms are also found as an alphabetical list at the very end of the chapter and in the final glossary.

## Visual Overview


The Visual Overview provides a dynamic visual diagram of one or more key concepts and helps to tie chapter themes and segments into a cohesive whole.

## Visual Summary


The Visual Summary is located at the end of the chapter and recaps the main ideas in each section using brief, bulleted sentences that are highlighted with an image that refers back to the section content.

**CONCEPT LEARNING CHECK 14.1** **Identifying Psychological Disorders**


Compare each behavior to the three criteria of psychological disorders. Then decide whether the behavior is disordered or not.




**Bethy** brought balloons to her first appointment with her therapist.




**Ben** throws a tantrum almost every day whenever he doesn't get his way. Ben is 22.



**Sam** throws a tantrum almost every day whenever he doesn't get his way. Sam is 2.



**Clara** is afraid of clowns. She wants to take her children to the circus, but she's afraid she'll see a clown. She avoids toy aisles in department stores for the same reason.



**Maria** is very afraid of snakes. She enjoys hiking, but won't go in the reptile house at the zoo.

Is it deviant?	Does it cause the person distress?	Is it maladaptive?	Is it a disorder?

CRITICAL THINKING APPLICATION

**A** few years ago in a small Connecticut city, a man named Scott left his office and began his drive home. He was 25 years old, single, and in good health. In fact, he had never suffered from more than a cold or a bad case of food poisoning. With no history of seizure disorder, Scott had a seizure while driving. Unable to control his muscles or his car, he lost control of the vehicle, killing one person and injuring several others.


When people who hear this story are asked if they think Scott should be punished, most say no, because they believe the accident wasn't his fault. Some may suggest that his driving privileges should be suspended until he is seizure-free. Almost everyone agrees, however, that putting him in jail wouldn't prevent or deter another similar accident.

Strangely, when this story is told so that Scott's "seizures" are instead called "hallucinations," people take a harsher view of Scott's role. They suggest that Scott should be committed to a mental institution or arrested and tried for the death and destruction he caused.

If we think about it, most of us would agree that seizures and hallucinations share some biological and physiological characteristics. Nevertheless, we tend to feel very differently about behavior that results from one condition versus another. Why?

**Evaluate**

1. Do attitudes about mental health affect how we treat, punish, or choose not to treat mental illnesses as opposed to other illnesses? Explain.
2. How might stigmas and biases about mental illness be reflected in our language and in our laws?




366 CHAPTER 7 Memory


**Visual Overview Types of Knowledge in Memory**

Different kinds of knowledge are organized in different ways in long-term memory.

**Schematic**




**"Triabulous"**




Knowledge Organization in Memory


**Semantic networks**




**Declarative**




**Autobiographical**

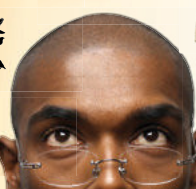


**Concepts**



**Procedural "know-to"**






Visual Summary of States of Consciousness

**51 Overview: Consciousness, Brain Activity, Levels of Awareness**

- Neuroscience imaging gives us a peek into what occurs in consciousness.
- Consciousness is dynamic and fluid.
- Our ability to selectively attend helps us to focus and attend.



**52 Sleep**

- Our brain is active during sleep.
- You progress through four distinct phases during sleep.
- Stage 1 is the phase between initial awakening and sleep.
- Stage 2 is distinguished by sleep spindles and K-complexes on the EEG.
- In Stage 3, delta waves emerge on the EEG.
- In Stage 4, delta waves are more prominent on the EEG.
- REM sleep emerges the second time you enter Stage 3 sleep and is associated with memory sorting and dreams.
- The neuroscience theory of sleep suggests that sleep reorganizes the body.



**53 Dreams**

- Dreams are an array of sensory experiences occurring during sleep.
- The activation-synthesis theory suggests that dreams are a reflection of consciousness in waking.



**54 Hypnosis**

- Hypnosis is a trance-like state induced by a person whose suggestions of changes in consciousness or responses are readily accepted by the subject.
- Not everyone is hypnotizable, about 10% of people can't be hypnotized, even by highly skilled professionals.
- Hypnosis can help many medical conditions in the past.
- Researchers can't consistently find changes in the brain that would explain that hypnosis is a special state of consciousness.
- The activation-synthesis theory of hypnosis suggests that dreams are the result of unperceived brain activity during the consolidation of our memories.

Visual Summary of States of Consciousness, continued



**55 Meditation**

- Meditation refers to any mental practice that focuses on regulating attention and awareness.
- The techniques of meditation build practice for the treatment of several conditions.



**56 Drug Use**

- A psychoactive drug is a chemical used to alter consciousness.
- The abuse of psychoactive substances can lead to addiction, tolerance, and dependence on withdrawal.
- A mechanism of action refers to the way a drug functions, and psychoactive drugs influence the functioning of the nervous system through their interaction on neurotransmitter functioning.
- Depressants are drugs that reduce the level of activity in the nervous system and include tranquilizers, alcohol, narcotics, barbiturates, and opiates.
- Stimulants are drugs that increase activity in the nervous system and include caffeine, nicotine, amphetamines, methylphenidate, cocaine, and ecstasy.
- Hallucinogens are a class of drugs that distort conscious experience and include LSD, mescaline, and psilocybin.

Preface

xxi



# Chapter Review Test

The Chapter Review Test is a multiple-choice self-quiz covering the entire chapter. Headings correlate to chapter sections as well as objective statements. Answers that provide complete rationales are also included.

The screenshot displays a digital interface for a Chapter Review Test. It contains several multiple-choice questions related to intelligence, such as 'The Nature of Intelligence' and 'Measuring Intelligence'. A table titled 'CHAPTER KEY TERMS' lists terms like 'Adaptation', 'Emotional intelligence', and 'Intelligence' with their corresponding definitions. The interface is clean and organized, with a sidebar on the left and a main content area.

# Chapter Discussion Questions

Open-ended questions provoke thoughtful discussions in the classroom or in online discussion boards. These questions are carefully chosen to illuminate key concepts of the chapter and to create a constructive experience of discussion, evaluation, and comparison in order to solidify comprehension.

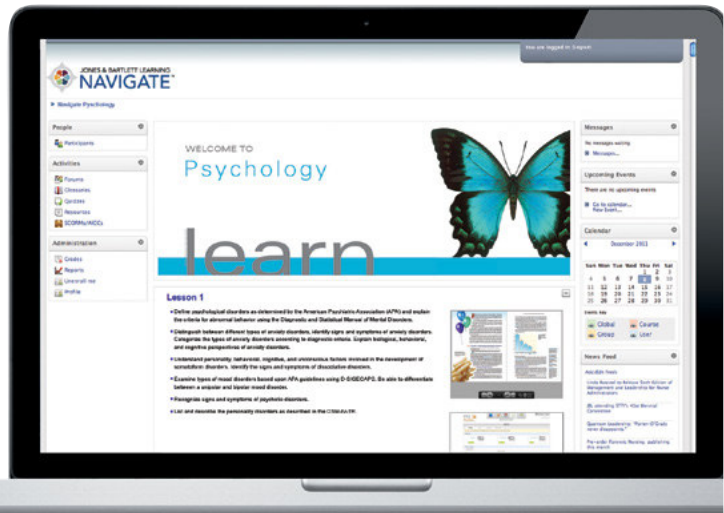
# Chapter Projects

Potential projects for individuals, pairs, or small groups are suggested. These can be done either in class or outside of class. They focus on an issue related to students' lives and experience, real-world applications, or media depictions of psychological concepts.

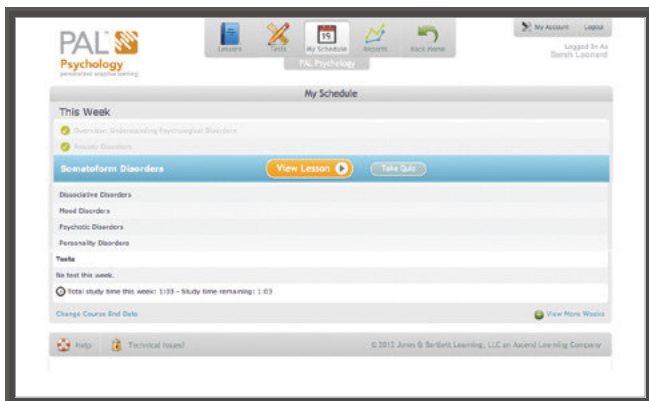
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5. Making an Argument
6. The Research Paper
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8. Elegance and Style

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—Kenneth Carter

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—Colleen Seifert



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## Chapter Overview ▼

### 1.1 The Science of Psychology

CONCEPT LEARNING CHECK **1.1** *The Scope and Limits of the Science of Psychology*

### 1.2 The Origins and History of Psychology

Philosophical Roots  
Biological Roots  
Schools of Thought:  
Structuralism vs. Functionalism  
Structuralism  
Functionalism

CONCEPT LEARNING CHECK **1.2** *Comparing and Contrasting Structuralism and Functionalism*

### 1.3 Contemporary Psychology

The Biological Perspective  
The Evolutionary Perspective  
The Psychodynamic Perspective  
The Behavioral Perspective  
The Humanistic Perspective  
The Cognitive Perspective  
The Sociocultural Perspective  
Professional Specialization and Research Areas in Psychology

CONCEPT LEARNING CHECK **1.3** *Contemporary Perspectives and Settings in Psychology*

# 1

# Psychology: An Overview

## Learning Objectives ▼

- 1.1** ■ Define the science of psychology.
  - Distinguish between psychological science and popular misconceptions about psychology.
- 1.2** ■ Discuss the origins and history of psychology.
  - Examine the role of philosophy and physiology in the development of psychology.
  - Contrast structuralism and functionalism.
- 1.3** ■ Compare and contrast contemporary perspectives in psychology.
  - Describe focused specializations of research and practice.
- 1.4** ■ Examine the role of critical thinking in the field of psychology.
  - Illustrate the five criteria for critical thinking.

## 1.4 Critical Thinking and Multiple Influences

Critical Thinking

The Importance of Multiple Influences

### CRITICAL THINKING APPLICATION

Summary of Multiple Influences on Psychology

CONCEPT LEARNING CHECK **1.4** *Applying the Criteria of Critical Thinking*



**I** am one of those people who always knew what I wanted to be when I grew up. Well, not always. It was around fifth grade that I stumbled upon psychology, and I knew that it was the career for me. Little did I know that I would spend the rest of my life as a psychologist and much of my social life preparing myself for a surprise each time someone discovered what I did for a living.

You see, when you are a psychologist, friends, family, and even strangers will bombard you with tons of questions about what kind of people are most compatible in a relationship and which antidepressants are best for poodles and what kind of person would keep a pet monkey and what it means when you dream about the ocean and . . . well, you get the point. Not just questions—theories, too: strange theories about behavior based on the tiniest sliver of psychology, theories based on flawed evidence, and, all too often, theories based on no evidence at all.

Psychology is a field that is vast, but not always in the ways that people think. Why are there so many questions and why so many theories? People have a natural curiosity about behavior and mental processes—a natural curiosity about psychology. But people do not always understand the difference between psychology and other ways to explain behavior. Such was the case back in graduate school one day as I was heading to campus on the shuttle. A fellow passenger noticed I was reading a book on relationships.

“Oh, you are a *psychologist*,” she said, with the same kind of lilt in her voice as if I had told her I was going to school to be a pirate.

“Yes, I am just reading about a theory of relationships.”

“Is it about Libras? What sign are you?”

“Oh . . . um . . . Well, you know that is astrolo—”

“I bet you are a Capricorn.”

“Well, no . . . I am a Taurus.”

“That is just what I thought. You are just like a Taurus. They taught you about that in grad school, right?”

“Well, no . . . nothing about Taurus. You see, that’s astrolog—”

“They *didn’t* teach you about personality? That’s stupid. Every psychologist should know about personality.”

“Oh . . . no, they did teach me about personality. I had several courses on personality theory, but horoscopes are not really psychology, that’s really astrolo—”

“You do not know about personality? I cannot believe you do not know the personality of a Taurus. Exactly what do they teach you about psychology in grad school?”

“Well . . . they teach you science.”

## 1.1 The Science of Psychology

Psychology is the scientific study of behavior and mental processes.

- Define the science of psychology.
- Distinguish between psychological science and popular misconceptions about psychology.

Tell someone you are studying psychology (go ahead—try it) and you are likely to hear some common reactions. Some people suppose you are interested in psychological disorders and may launch into a story about an uncle who collected lost keys or a friend who nibbles her food in careful counter-clockwise bites. Still others may abruptly silence themselves, admitting nervously that they fear that you are going to analyze them. Some might even huff and say that psychology is the science of the obvious. You see, misunderstandings about the field of psychology are deep and wide ranging. Often they are based on popular belief, media portrayals, or assumptions that have little or nothing to do with the science of psychology. **Psychology**, the scientific study of mental processes and behavior, is a fascinating science, and you have come to study it at a very good time. While people have pondered behavior and mental processes for ages, it is only fairly recently that we have examined them scientifically.

The word *psychology* comes from two Greek words: *psych* (meaning *mind*) and *logo* (*study*). The word *psychology* translates to *study of the mind*. Today, psychology has broadened its scope beyond the study of subjective experiences of the **mind** to answer a vast number of questions about mental processes and behavior. To name just a few: What is the best way to treat psychological conditions such as depression? How do children learn to speak? What causes us to fear or to love or to laugh? What motivates people to work hard in school and in their careers? How do we make meaning out of the sounds we hear and the things we see? How do we go about making sense of the world around us? The study of the mind is one of the most important sciences because it addresses something of natural interest to everyone who has a mind. It also offers essential insights into and understanding of what it means to be human.

If you think about it, we are all in the business of examining behavior and mental processes. After all, since we all have minds, we all know something about how they work. It is common to wonder about the attitudes and behavior of those around us, as well as our own. We try to behave appropriately (for the most part) in various situations, and often we try to influence the behavior of others. Some of us are known for understanding, and at times anticipating, the attitudes and behaviors of others. So how are psychologists any different?

Psychologists are different because they are scientists, and their work is based on scientific principles. **Science** is the operation of general laws, especially as obtained and tested through the scientific method. Wilson (1999) says that science “is the organized, systematic enterprise that gathers knowledge about the world and condenses this knowledge into testable laws and principles” (p. 58). Science emphasizes **empiricism**, or knowledge based on observation. We will discuss the principles of scientific study and the scientific method. We have a tremendous arsenal of methods that allow us to systematically

**Psychology** The scientific study of behavior and mental processes.

**Mind** Mental processes and our subjective experiences.

**Science** The operation of general laws, especially as obtained and tested through the scientific method.

**Empiricism** The theory of knowledge that assumes that knowledge should be based on observation.

### THE FIRST CENTURY

#### of Psychological Science and Practice in America

Dr. Ludy T. Benjamin, Jr.

**M** Movement or shift in field

**F** Fields

**E** Event/major meeting/ milestone

**L** Legal or accreditation

**P** Publication or new journal

**S** Major study

### 1880s

**M** Child Study Movement began

**M** Psychology taught within traditional philosophy departments

**E** First American psychology laboratories: Johns Hopkins, Pennsylvania, Indiana, Wisconsin, Clark, Nebraska, Kansas

**P** Publication of George Trumbull Ladd's *Elements of Physiological Psychology* (1887)

**P** Founding of *American Journal of Psychology* (1887) by G. Stanley Hall

### 1890s

**M** Structuralism flourished under Titchener at Cornell University

**M** Beginnings of American functionalism and its conflict with structuralism

**E** Psychology laboratories founded at many universities including Columbia, Iowa, Michigan, Wellesley, Harvard, and Texas

**E** American Psychological Association formed in 1892 by G. Stanley Hall and others

**P** Coining of the term “mental test” in 1890 by James McKeen Cattell and development of anthropometric mental testing

**P** Publication of William James's *Principles of Psychology* (1890)



**Empirical evidence** A type of information that is capable of being confirmed or invalidated by systematic observation.



Figuring out what a species of fish eats is much easier than determining what a particular fish had to eat that day.

examine behavior and the psychological factors that drive it. Today's psychology is called psychological science at some universities in recognition of the rigor of its study. The science you will read about in *Learn Psychology* is based on solid, **empirical** observations that are repeatable.

A field of study that uses the scientific method to increase knowledge is a science. Legions of scientists, from astronomers to zoologists, use scientific methodology to investigate and improve our knowledge of the world around us and beyond. For example, physicists, geologists, and astronomers improve our understanding of the universe. Biologists and chemists study the origins of life, its endless variations, and, in medical science, the preservation of life and health in humans. The study of mental processes and human behavior is reserved for psychologists, using scientific methodology to improve our knowledge about us, making it one of the most vital, influential, and important sciences. In addition, psychologists are the only scientists who use the *subject* of their investigations—the mind—to *perform* their investigations. It is a unique challenge. As you will learn, designing and conducting experiments that reveal important insights about our mental processes and behavior is a demanding task. For some, it is a life's work. Clearly, this approach to understanding and at times anticipating the attitudes and behaviors of others is far removed from the intuitive “horse sense” that some people seem to have about others. Further, intuition resists explanation and cannot be taught. Often it is just plain wrong. Psychology, being based on scientific principles, welcomes analysis and criticism. Some of the experimental studies you will read about have been performed dozens of times over the years with dozens of different populations. Some of the general laws of psychology you will study may indeed be predictable, but many others are guaranteed to surprise you! We hope that this text engages you in learning about the many ways the science of psychology has advanced far beyond what we as individual “users” know about the mind.

Sometimes, however, the results of scientific inquiry are unsatisfactory. This may be due to our expectations: They may be unrealistic. For example, if you asked a biologist to tell you what a goby fish eats, I am certain that any ichthyologist, a biologist who studies fish, could spout off the favorite meals of the goby quite easily. If, however, I produced a goby from a bowl and asked an ichthyologist to tell you what this specific fish ate yesterday, you would have a different story. The sentences would be full of “probably” and “likely” meals for the fish. Science is pretty good at describing and predicting trends for larger groups, but the more specific you get, the more problems there are. Things get fuzzier the more specific your demands. It is the same for planets, plants, and people. Astronomy, too, is much better at explaining the general than the specific. We can say more confidently, for example, how planets come to be than how our planet, the Earth, came to be. And with psychology, we can say why some people may be shy, but not necessarily why any particular person is or may be shy. We can predict how aggressive people are based on the area of the country they live in (Cohen, Nisbett, Bowdle, & Schwarz, 1996), the temperature on a given day (Anderson & Anderson, 1984), the levels of the hormone testosterone in their saliva (Yu & Shi, 2009), and whether they have just won or lost a soccer game (Rasclé et al., 2010). But we cannot predict whether a specific individual

## 1890s (Continued)

- M** Edward Thorndike's pioneering work in animal learning
- M** Dominance of studies of sensation and perception in the study of human consciousness
- E** Joseph Jastrow organized psychology exhibition at the Chicago World's Fair (1893)
- E** Founding of the first psychological clinic at the University of Pennsylvania by Lightner Witmer (1896)
- P** Cattell bought *Science* magazine (1894)
- S** First study on the psychology of advertising by Harlow Gale (1895)

## 1900s

- M** Studies of learning became more prominent, especially animal learning
- F** Applied areas of study included: child development, educational psychology, abnormal psychology, mental testing
- E** First psychology laboratory in a mental hospital—McLean Hospital in Belmont, Massachusetts (1904)
- P** Publication of the four volumes of Titchener's *Experimental Psychology* (“The manuals”) (1901–1905)
- P** First books on social psychology (1909)
- M** Founding of Titchener's Experimentalists (1904)
- M** Mental hygiene movement began (1908)
- M** Formalization of American functional psychology (functionalism) at the University of Chicago and Columbia University
- E** Sigmund Freud visited America for the Clark University 20th anniversary (1909)
- L** First eugenic sterilization law in Indiana (1907)
- P** New journals: *Journal of Philosophy, Psychology, and Scientific Method* (1903), *Psychological Bulletin* (1904), *Journal of Abnormal Psychology* (1906), *The Psychological Clinic* (1907)

will become a domestic abuser, even knowing his or her personal circumstances. It is understandable that this may be disappointing. After all, we are not interested in predictions of behaviors in general as much as we are interested in why people we know do—or do not do—certain things. The limits of prediction are a problem shared by all sciences.

Finally, it is important to recognize that not everything that sounds like science is science. Sometimes we come to believe things because they are dressed up as science. Information that appears scientific but is based on unsound scientific principles is **pseudoscience**. Pseudoscience that can seem somewhat scientific is often appealing. There are some famous examples of pseudoscience. Maybe you have a roommate who listens to classical music when he or she studies. Maybe you listen to it yourself. Take a moment to listen to some classical music. Do you feel yourself getting smarter? Does listening to classical music improve intelligence? Some people in Georgia thought so. They enlisted corporations to donate classical music recordings to expectant mothers. Do a quick search of the Internet for “Mozart effect” and I am sure you will locate dozens and dozens (and dozens) of websites that describe the connection between intelligence and classical music.

A peek into the original study reveals some surprising findings (Rauscher, Shaw, & Ky, 1993). The researchers examined the effect of listening to classical music—namely the first few minutes of “Mozart Sonata for 2 Pianos in D Major”—on a few dozen college students. The researchers found a temporary increase in spatial–temporal reasoning on an IQ test. Since that time, many people have tried, but no one has ever been successful at duplicating the results of the study (Pietschnig, Voracek, & Formann, 2010).

The greatest difficulty in the study of psychology is the vast number of topics that fall under its purview. Everything we do involves our mental processes in some way, so the behaviors of interest include a wide range of topics, from marriage proposals to Google circles. The only limitation to the study of human behavior is figuring out a method for observing it. In this text, we will examine some of the important topics in psychology and introduce you to them. It is a daunting task, nearly like showing a friend your favorite sites on the Internet in only a few moments. We have tried to highlight the most important research findings, the “greatest hits,” and the hottest new science, all of which reveal important principles and insights about mental processes and human behavior.



Does listening to Mozart make you smarter? Some researchers thought so. Then their results sparked a pseudoscience theory called the Mozart effect.

**Pseudoscience** Information that appears scientific but is based on unsound scientific principles.

## CONCEPT LEARNING CHECK 1.1

### The Scope and Limits of the Science of Psychology

1. Wilson just read in his psychology text that most people require 8 hours of sleep to be rested, but he feels rested after only sleeping 5. Wilson now believes that the sleep researcher must be wrong. How would you respond to Wilson's claim?
2. Make a list of some topics you are excited to learn about in psychology. Use the table of contents and the index to map out where the topics might appear. Do not be surprised if you find topics in many locations.

## 1910s

**M** Rapid growth of industrial psychology

**E** World War I provided a significant impetus to applied psychology, particularly mental testing and abnormal psychology

**E** Psychologists were stationed at 40 Army hospitals during the war

**E** New York Psychoanalytic Society (1911), American Psychoanalytic Association (1911)

**P** Watson published his behaviorist manifesto (1913)

**P** New journals: *Journal of Educational Psychology* (1910), *Psychoanalytic Review* (1913), *Journal of Experimental Psychology* (1916), *Journal of Applied Psychology* (1917)

**E** First internships in psychology were begun at the Boston Psychopathic Hospital under Robert Yerkes (1912)

**E** Founding of American Association of Clinical Psychologists (1917)

**S** Research on the nature and origin of sex differences; early work on the psychology of women

**P** Lewis Terman's version of Binet scale, the Stanford-Binet (1917)

## 1920s

**M** Decade of greatest popularity of psychology with the public

**M** Gestalt psychology ideas crossed the Atlantic

**M** Structuralism disappeared after the death of Titchener in 1927

**L** APA established a certification program for consulting psychologists

**E** Francis Cecil Sumner is first African-American PhD in psychology (1920)

**E** American Vocational Guidance Association (1921)

**P** Appearance of several American popular psychology magazines

## 1.2 The Origins and History of Psychology

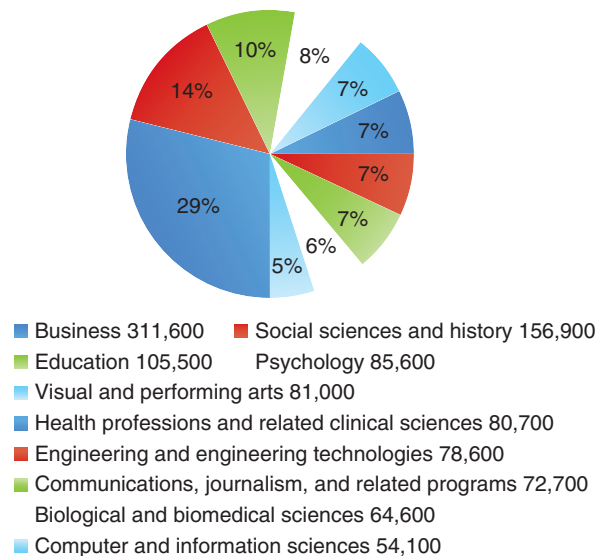
Psychology has roots in other disciplines such as philosophy and biology that have influenced both early and contemporary perspectives in psychology.

- Discuss the origins and history of psychology.
- Examine the role of philosophy and physiology in the development of psychology.
- Contrast structuralism and functionalism.

If you wanted to study psychology in, say, the late 1700s, you were pretty much out of luck. Psychology had not grown into its own discipline yet. It was the realm of thinkers in philosophy and biology. Philosophers were interested in what it means to be human, so they began studying the mind, or our subjective experience. Biologists, on the other hand, were busy studying our organs, including the brain. It would not be until much later that *psychological scientists* would emerge to construct a scientific approach to behavior and mental processes.

How did psychology emerge from the fringes of philosophy and biology to become one of the most popular sciences of the 21st century [FIGURE 1-1](#)? Changes in psychology were, in part, the result of debates among the early schools of psychology that turned the young discipline to science in order to answer questions about the structure and function of behavior and mental processes. Psychology as an independent discipline did not emerge until the late 19th century (around the time of the invention of the first cash register, blue jeans, and the electric light bulb).

**FIGURE 1-1** Psychology has become one of the most popular undergraduate degrees.  
Source: Data from Monitor on Psychology, June 2008, Vol. 39, No. 6.



### 1920s (Continued)

- M** Debates over nature-nurture
- M** Child Guidance Movement began
- M** Behaviorism became dominant system of psychology
- E** The Psychological Corporation (1921)
- E** Ninth International Congress of Psychology—Yale University (1929)
- E** Psi Chi (1929)
- P** Rorschach Test (1921), teaching machine (1924), Draw-a-Man Test (1926)
- P** First textbooks published on the history of psychology (1929)

### 1930s

- M** Emphasis on operationism and operational definitions
- M** Growth of projective testing
- M** Decade for grand theories of personality (Allport, Murray)
- M** Beginning of neobehaviorism (Tolman, Hull, Guthrie, Skinner)
- M** Beginnings of differential academic training for experimental and clinical psychologists
- M** Large influx of emigre psychologists from Europe, especially Germany and Austria
- E** Association for Consulting Psychologists (1930); Society for Research in Child Development (1933); Society for the Psychological Study of Social Issues (1936); American Association for Applied Psychology (1937)
- E** Inez Beverly Prosser—first African-American woman PhD in psychology (1933)
- E** Boder's Psychological Museum in Chicago (1937)
- S** Kelloggs' ape and child study (1931); Psychometric Society (1935)
- P** Psychological Round Table (1936)
- P** Thematic Apperception Test (1935)
- P** *Journal of Consulting Psychology* (1937); *Journal of Parapsychology* (1938)