Table of Contents

Preface **xiv**About the Author **xvi**Supplements and Resources **xvii**

PART 1: Origins and Methods of Psychology

Chapter 1



The Origins of Psychology

1.1	The Study of Psychology	1
1.1	THE Study of Psychology	J

1.2 Definition of Psychology 2

- 1.2a Psychology as a Science 2
- 1.2b The Study of Behavior 3
- 1.2c The Study of Humans and
 - Other Animals 4

1.3 Psychology's History 6

- 1.3a Structuralism 8
- 1.3b Functionalism 9
- 1.3c Psychoanalysis 10
- 1.3d Behaviorism 10
- 1.3e Gestalt Psychology 11
- 1.3f Humanistic Psychology 13

1.4 Contemporary Psychology

- 1.4a Fields of Specialization in Psychology 14
- 1.4b Careers in Psychology 20

1.5 The Goals of Psychology 21

Chapter Review 23
Terms and Concepts 26
Pop Quiz 27

Chapter 2



The Methods of Psychology 31

2.1 The Scientific Method and Behavior 31

2.1a The Purpose of Psychological Research 32

2.2 Research Methods 35

- 2.2a Nonexperimental Research Methods 36
- 2.2b Experimental Research Methods 46
- 2.2c Ethics in Psychological Experiments 49
- 2.2d Ethical Guidelines for Research 50

2.3 Statistical Concepts for Research 52

- 2.3a Descriptive Statistics 52
- 2.3b Inferential Statistics 55
- 2.3c Evaluating Opinions, Beliefs, and Scientific Evidence 56

Chapter Review 57
Terms and Concepts 60
Pop Quiz 61

PART 2: Biological Foundations, Perception, and Sleep

Chapter	3
---------	---



The Biology of Behavior 65

- 3.1 Overview of the Nervous System: Organization and Function 65
- 3.2 Neurons: Basic Units of the Nervous System 67
 - 3.2a Neuron Structure 67
 - 3.2b Neural Transmission 69
 - 3.2c Neuron Electrical Activity 69
 - 3.2d Neurotransmitters and the Synapse 73
 - 3.2e Neurotransmitters and Behavior 78
- 3.3 The Peripheral Nervous System 79
 - 3.3a The Somatic Nervous System 79
 - 3.3b The Autonomic Nervous System 80
- 3.4 The Central Nervous System— The Brain and Spinal Cord 82
 - 3.4a The Spinal Cord 83
 - 3.4b The Medulla 84
 - 3.4c The Pons 84
 - 3.4d The Cerebellum 85
 - 3.4e The Reticular Formation 85
- 3.5 The Limbic System 86
 - 3.5a The Amygdala 87
 - 3.5b The Hippocampus 87
 - 3.5c The Septum 87
 - 3.5d The Hypothalamus 88
 - 3.5e The Thalamus 89
- 3.6 The Basal Ganglia 89
- 3.7 The Cerebral Cortex 89
 - 3.7a Localization of Cortical Functioning 91
 - 3.7b Sex Differences in the Brain 94

- 3.7c Lateralization of Function 9
- 3.7d How the Brain Is Studied 99
- 3.8 The Endocrine System 102
 - 3.8a The Pituitary Gland 104
 - 3.8b The Thyroid Gland 104
 - 3.8c The Adrenal Glands 104
 - 3.8d The Gonads 105
- 3.9 Drugs and Behavior 105
 - 3.9a Depressants: Sedatives, Opiates, and Alcohol 10
 - 3.9b Stimulants: Caffeine, Nicotine, Amphetamines, and Cocaine 108
 - 3.9c Hallucinogens: LSD, Psilocybin, and Ecstasy 110
 - 3.9d Marijuana 111

Chapter Review 113 Terms and Concepts 117 Pop Quiz 119

Chapter 4



Sensation and Perception 123

- 4.1 Principles of Sensation and Perception 123
 - 4.1a Transduction 123
 - 4.1b What Do We Perceive? 124
 - 4.1c Psychophysics 125
- 4.2 Vision 132
 - 4.2a Light: The Stimulus for Vision 132
 - 4.2b Structure and Function of the Eye 134
 - 4.2c Color Vision 140
- 4.3 Audition 145
 - 4.3a Sound: The Stimulus for Audition 146
 - 4.3b Structure and Function of the Ear 148
 - 4.3c Theories of Audition 151
 - 4.3d Auditory Localization 152
 - 4.3e Hearing Loss 153

4.4	Gusta	tion and Olfaction 155
	4.4a	Gustation 155
	4.4b	Olfaction 156
4.5	The S	kin Senses 159
	4.5a	Pressure 160
	4.5b	Temperature 160
	4.5c	Pain 160
4.6	Kines	thesis and Equilibrium 162
4.7	Synes	thesia 164
4.8	Perce	iving the World 165
	4.8a	
	4.8b	Spatial Perception 170
	4.8c	Visual Illusions 178
	4.8d	Perceptual Sets 183
	oter Re	view 185
	Quiz	Concepts 189 191
τορ	Quiz	191
Sle	ep, D	oter 5
Sle	ep, D	27.10
Sle Cor	ep, D iscioi	reaming, and usness 195
Sle	ep, D iscioi	reaming, and usness 195 gical Rhythms 195
Sle Cor 5.1	ep, D nsciou Biolog	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195
Sle Cor	ep, D nsciou Biolog 5.1a The S	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S Drear	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198
Sle Cor 5.1	ep, D sciou Biolog 5.1a The S Drear 5.2a	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S Drear 5.2a 5.2b	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S Drear 5.2a 5.2b	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202 Change in Sleep Patterns with Age 203
Sle Cor 5.1	ep, D Isciol Biolog 5.1a The S Drear 5.2a 5.2b 5.2c	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202 Change in Sleep Patterns with Age 203
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S Dream 5.2a 5.2b 5.2c	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202 Change in Sleep Patterns with Age 203 Brain Mechanisms of Sleep 203
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S Dream 5.2a 5.2b 5.2c	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202 Change in Sleep Patterns with Age 203 Brain Mechanisms of Sleep 203 The Function of Sleep 205 Theories of Sleep Function 208
Sle Cor 5.1	ep, D nsciou Biolog 5.1a The S Dream 5.2a 5.2b 5.2c 5.2d 5.2c 5.2d 5.2e 5.2f 5.2g	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202 Change in Sleep Patterns with Age 203 Brain Mechanisms of Sleep 203 The Function of Sleep 205 Theories of Sleep Function 208
Sle Cor 5.1 5.2	ep, D nsciou Biolog 5.1a The S Dream 5.2a 5.2b 5.2c 5.2d 5.2c 5.2d 5.2e 5.2f 5.2g	reaming, and usness 195 gical Rhythms 195 Circadian Rhythms 195 cience of Sleep and ming 197 Stages of Sleep 198 The Sleep Cycle 202 Change in Sleep Patterns with Age 203 Brain Mechanisms of Sleep 203 The Function of Sleep 205 Theories of Sleep Function 208 Dreaming 209 ders of Sleep 211

5.3d	Nightmares 214
5.3e	Sleepwalking 214
5.3f	Sleep Talking 215
Hypne	osis 216
5.4a	Phenomena Associated
	with Hypnosis 216
5.4b	Explaining Hypnosis 218
Consc	iousness 220
5.5a	Neurobiology of
	Consciousness 220
olying Psy	/chology: Suggested
nedies for	Insomnia 222

App Ren

Chapter Review 223 Terms and Concepts 225 Pop Quiz 226

5.4

5.5

PART 3: Learning, Memory, Cognition, Motivation, and Emotion

Chapter 6



Lea	rning	and Benavior 229
6.1	Defini	ing Learning 229
	6.1a	How Learning Takes Place 230
6.2	Pavlov	vian Conditioning 231
	6.2a	Pavlov's Discovery 232
	6.2b	Acquisition of Pavlovian
		Conditioning 235
	6.2c	Stimulus Contingency
		and Conditioning 236
	6.2d	CS-UCS Timing and
		Conditioning 237
	6.2e	Extinction and Reinstatement 239
	6.2f	Stimulus Generalization and
		Discrimination 240
	6.2g	Second-Order Conditioning 241

5.3c

Narcolepsy 213

6.3	Oper	ant Conditioning 242		7.2d	Long-Term Memory 284
	6.3a	Operant Conditioning in		7.2e	Explicit and Implicit Memory 292
		a Skinner Box 243	7.3	Mem	ory as a Dynamic Process 293
	6.3b	Reinforcement 245		7.3a	Constructive Memory 293
	6.3c	Reinforcing the Initial		7.3b	False Memories 295
		Operant Response 251		7.3c	Schemas 296
	6.3d	Punishment and Operant		7.3d	Eyewitness Testimony 297
		Behavior 252		7.3e	State Dependency 300
	6.3e	Limitations of Punishment 253		7.3f	Extreme Emotion 300
	6.3f	Advantages of Punishment 254	7.4	Forge	etting 301
6.4	_	paring Pavlovian and		7.4a	Decay of the Memory Trace 301
	Oper	ant Conditioning 256		7.4b	Interference 302
	6.4a	Two-Factor Theory of		7.4c	Retrieval Failure 304
		Avoidance Learning 257		7.4d	Motivated Forgetting 304
6.5	Cogn	itive Influences on Learning 258		7.4e	Diseases That Cause
	6.5a	Latent Learning 258			Forgetting 304
	6.5b	Cognitive Processes in		7.4f	Daniel Schacter's Seven
		Learning 259			Sins of Memory 306
	6.5c	Observational Learning 261	7.5	The I	Biology of Memory 306
6.6	Biolo	gical Bases of Learning 263		7.5a	The Hebbian Rule 306
	6.6a	Pavlovian Conditioning		7.5b	Long-Term Potentiation 307
		of the Aplysia 263		7.5c	Distributed Memory 308
Appl	ying Ps	sychology: Pavlovian		7.5d	Neural Structures for Long-
Cond	litionin	g 266			Term Memory 308
Cha	oter Re	eview 268		7.5e	Where Are Short-Term, Working
		Concepts 271			Memories Processed? 309
	Quiz		App	lying Ps	ychology: Improving Memory 312
			Cha	pter Re	eview 315
				•	Concepts 318
				Quiz	
	٠١		'		
	.na	pter /			
	_				
				• I	
Me	mory	275	(∙na	pter S
7.1	What	t Is Memory? 275			
	7.1a	Information Processing	λπ		222
		and Memory 276	INIO	tivati	on 323
	7.1b	Memory Processes 276	8.1	The N	Nature of Motivation 323
7.2	A Mo	del of Memory 277		8.1a	Defining Motivation 324

Memory Systems 277

Sensory Memory 278

Short-Term or Working

Memory 281

7.2a

7.2b

7.2c

Motivational Explanations

8.2a Instinct Theory 325

of Behavior 324

8.2

8.2b Drive-Reduction Theory 8.2c Cognitive Theories of Motivation 327 8.2d Biological Bases of Motivation 8.2e Hormones Controlling Hunger 334 8.3 Eating Disorders: Obesity, Anorexia, and Bulimia 335 8.3a Obesity 335 8.3b Anorexia and Bulimia 3 8.4 Sensation-Seeking Motivation 8.4a Optimum Level of Arous 8.5a Biological Bases of Sexual Behavior 341 8.5b Psychosocial Factors in Sexual Behavior 342 8.5c Sexual Orientation and	9.3g Opponent Processes and Motivation 374 9.4 Stress 375 9.4a The Stress Response 377 9.4b Physiological Responses to Stress 377 9.4c Stressors 380 9.4d Stress and Disease 381
Identity 345 Applying Psychology: Some Suggestion Overcoming Obesity 349 Chapter Review 351 Terms and Concepts 354 Pop Quiz 355	Chapter 10 Cognition: Thinking and Language 395
Chapter 9 Emotion and Stress 359 9.1 The Components of Emotion	10.1 Thinking 395 10.1a Components of Thinking 396 10.1b Prototypes and Exemplars 400 10.2 Problem Solving 402 10.2a Stages of Problem Solving 402 10.2b Strategies for Problem Solving 40 10.2c Characteristics of Difficult Problems 407
9.1a Physiological Arousal 39.1b Cognitive Processes 36	
9.2 The Range of Human Emotion 9.2a Plutchik's Emotional Wh	
9.3 Theories of Emotion 362 9.3a The James-Lange Theory 9.3b The Cannon-Bard Theory 9.3c The Schachter-Singer Theory	Reasoning for Decisions 415 10.3d Descartes's Square Model for Decision-Making 419 10.3e The Role of Emotion in

10.4	Langu	iage 420		
	10.4a	Psycholingu	istics 421	l
	10.4b	Theories of I	Language	
		Acquisition	422	
	10.4c	Stages of Lar	nguage	
		Acquisition	424	
	10.4d	Brain Mecha	nisms for	
		Language	426	
	10.4e	Is Language	Unique to	,
		Humans?	428	
,		view 432		
Term	s and (Concepts 4	135	
Pop (Quiz .	436		

PART 4: Developmental Processes and Individual Differences

Chapter 11



Development 1: Conception Through Childhood 439

11.1	Developmental Issues 439			
	11.1a	Heredity and Environment		
	11.1b	Continuous Versus Stage		
		Development 441		
	11.1c	Critical Periods in		
		Development 442		

11.2 Developmental Research 443

11.2a The Cross-Sectional Design 443
11.2b The Longitudinal Design 444
11.2c The Cross-Sequential Design 444

11.3 The Beginning of Life 445 11.3a Genes and Chromosomes 446 11.3b Genetic Abnormalities 451

11.4 Prenatal Development 454 11.4a Germinal Stage 454

11.4b Embryonic Stage 454

11.4c	Fetal Stage 456	
11.4d	The Effects of Alcohol an	d
	Drugs on Development	456

11.5 Physical Development 457

11.5a Development of the Brain 45711.5b Physical Growth 460

11.5c Motor Development 460

11.6 Cognitive Development 462

11.6a Piaget's Theory of Cognitive Development 46211.6b Gender Differences in

Cognitive Abilities 468

11.7 Psychosocial Development 470

11.7a Attachment 47111.7b Parenting Styles and Social-Emotional Development 475

11.7c Erikson's Theory of
Psychosocial Development 476

11.8 Gender Identity 479

11.8a Biological Influences on Gender Identity 479

11.8b The Socialization of Gender Roles 483

Chapter Review 486 Terms and Concepts 490 Pop Quiz 491

Chapter 12



Development 2: Adolescence to the End of Life 495

12.1 Adolescence 495

12.1a Physical Development
During Adolescence 496

12.1b Cognitive Development
During Adolescence 497

12.1c Moral Development During Adolescence 498

12.1d Psychological Development During Adolescence 502

12.2	Adulthood	506
------	-----------	-----

- 12.2a Physical Development in Early and Middle Adulthood 506
- 12.2b Cognitive Development in Early and Middle Adulthood 508
- 12.2c Psychosocial Development in Early and Middle Adulthood 509

12.3 The Older Years 514

- 12.3a The Graying of America 514
- 12.3b Physical Development in the Older Years 515
- 12.3c Cognitive Changes in the Older Years 516
- 12.3d Psychological Development in the Older Years 518

Chapter Review 520 Terms and Concepts 523 Pop Quiz 524

Chapter 13



Intelligence 527

13.1 Defining Intelligence 528

13.2 Measuring Intelligence 529

- 13.2a Binet and Intelligence Testing 529
- 13.2b The Stanford-Binet Intelligence Scale 531
- 13.2c The Wechsler Adult
 Intelligence Scale 531

13.3 Evaluating Intelligence Tests 533

- 13.3a How Intelligence Tests Are Developed 533
- 13.3b Test Reliability and Validity 536
- 13.3c Achievement and Aptitude Tests 537

13.4 Theories of Intelligence 538

- 13.4a Factorial Theories 538
- 13.4b Process Theories 540

13.5 Hereditary and Environmental Influences on Intelligence 543

- 13.5a Isolating Contributions to Intelligence 545
- 13.5b Twin Studies 545
- 13.5c Evaluating the Hereditary and Environmental Evidence 547

13.6 Racial Differences in Intelligence 547

13.6a Within- and Between-Group
Differences and Intelligence 547

13.7 Artificial Intelligence 550

Chapter Review 551
Terms and Concepts 554
Pop Quiz 555

Chapter 14



Personality: Theories and Assessment 559

- 14.1 Defining Personality 559
- 14.2 Theories of Personality 560
 - 14.2a Trait Theories 560
 - 14.2b Evaluating the Trait Theories 565

14.3 Psychoanalytic Theory 567

- 14.3a The Historical Context of Freud's Theory 567
- 14.3b Personality and the Unconscious 567
- 14.3c The Structure of Personality 569
- 14.3d Personality Dynamics 571
- 14.3e Freud's View of Personality
 Development 575
- 14.3f Evaluating Freud's
 Psychoanalytic Theory 576
- 14.3g Other Psychodynamic Theorists: The Neo-Freudians 578

14.4 Humanistic Theories of

Personality 581

14.4a Rogers: The Concept of Self 581

14	4.4b Maslow: Self-Actualization 582 4.4c Evaluating Humanistic Theories 584 ehavioral and Social-Learning	15.5	Obsessive-Compulsive and Related Disorders 613 15.5a Obsessive-Compulsive Disorder 613
T1 14 14	heories of Personality 584 4.5a The Behavioral Perspective 585 4.5b The Social-Learning Perspective 586 4.5c Evaluating Behavioral and Social-Learning Theories 588 he Assessment of Personality 588	15.6	Trauma- and Stressor- Related Disorders 614 15.6a Post-Traumatic Stress Disorder 614 15.6b Theoretical Perspectives on Anxiety, Post-Traumatic Stress, and Obsessive-
14 14 14 14 Chapte	4.6a Behavioral Observation 589 4.6b Interviews 590 4.6c Questionnaires 591 4.6d Projective Tests 593 r Review 597	15.7	Compulsive Disorders 615 Somatic Symptom Disorders 619 15.7a Somatic Symptom Disorder 619 15.7b Illness Anxiety Disorder 619 15.7c Conversion Disorder 620 15.7d Theoretical Perspectives on
Pop Qu	and Concepts 601 uiz 602	15.8	Somatic Symptom Disorders 621 Dissociative Disorders 621 15.8a Dissociative Amnesia 621
and T	5: The Nature reatment of vioral Disorders		 15.8b Depersonalization- Derealization Disorder 622 15.8c Dissociative Identity Disorder 622 15.8d Theoretical Perspectives on Dissociative Disorders 623
Ch	apter 15	15.9	Depressive Disorders 623 15.9a Major Depressive Disorder 624 15.9b Bipolar Disorder 625 15.9c Theoretical Perspectives on Depressive Disorders 628
Behav	vioral Disorders 605	15.10	Schizophrenia 631 15.10a Primary Symptoms of
15.2 Cl 15.3 At	efining Abnormal Behavior 605 lassifying Behavioral Disorders 608 ttention-Deficit/Hyperactivity isorder 609		Schizophrenia 633 15.10b The Development of Schizophrenia 635 15.10c Positive and Negative Symptoms of Schizophrenia 635
15 15 15	nxiety Disorders 609 5.4a Panic Disorder 609 5.4b Agoraphobia 610 5.4c Social Anxiety Disorder 611 5.4d Specific Phobia 611	15.11	15.10d Theoretical Perspectives on Schizophrenia 636 Personality Disorders 640 15.11a Antisocial Personality Disorder 640

15.4e Generalized Anxiety Disorder **612**

15.11b Theoretical Perspectives on Antisocial Personality Disorder 641

Chapter Review 643 Terms and Concepts 647 Pop Quiz 648

Chapter 16



Treatment of Behavioral Disorders 651

16.1	Psychological	Therapies	651

- 16.1a Psychoanalysis 651
- 16.1b Techniques of Psychoanalysis 652
- 16.1c The Present Status of Psychoanalysis 655
- 16.1d Cognitive Therapies 655
- 16.1e Behavioral Therapies 658

16.2 Biologically Based Therapies 664

- 16.2a Psychosurgery 664
- 16.2b Electroconvulsive Therapy and Magnetic Seizure Therapy 667
- 16.2c Deep Brain Stimulation 668
- 16.2d Psychoactive Drugs 669
- 16.2e Summary of Psychoactive Drugs 673

Applying Psychology: Guidelines for Seeking Professional Help 674

Chapter Review 676 Terms and Concepts 678 Pop Quiz 679

Chapter 17



Social Psychology 683

- 17.1 Social Perception 684
 - 17.1a First Impressions 684
 - 17.1b Person Schemas 685
 - 17.1c Implicit Personality Theories 685
- 17.2 Attribution Theories 686
 - 17.2a The Correspondent Inference Theory **687**
 - 17.2b Covariation Principle 688
 - 17.2c Attribution Errors 689
- 17.3 Attitudes 692
 - 17.3a Acquiring Attitudes 692
 - 17.3b The Function of Attitudes 694
 - 17.3c Do Attitudes Predict Behavior? **695**
 - 17.3d Changing Attitudes 697
- 17.4 Prejudice 699
 - 17.4a Outgroups, Ingroups, and the Causes of Prejudice 700
- 17.5 Implicit Attitudes 702
 - 17.5a The Implicit Association Test 702
- 17.6 Social Influences on Behavior 703
 - 17.6a Conformity 703
 - 17.6b Compliance 707
 - 17.6c Obedience 708
 - 17.6d Groupthink 709
- 17.7 Interpersonal Behavior: Attraction

and Aggression 710

- 17.7a Attraction 710
- 17.7b Aggression 714

Chapter Review 720

Terms and Concepts 724

Pop Quiz 725

Appendix 727

A.1 Descriptive Statistics 727 A.1a Measures of Central Tendency 727 A.1b Measures of Variability 732 A.1c Normal Frequency Distributions 735 A.1d Correlation 739 A.1e Linear Regression 743 A.2 Inferential Statistics 746 A.2a Estimation 746 A.2b Hypothesis Testing 747 A.3 Advanced Statistical Techniques 751 A.3a Analysis of Variance 751 A.3b Factor Analysis 751 Terms and Concepts 752 Pop Quiz 753 Glossary 755 References 785 Name Index 823 Index 829