



PSYCHOLOGY

THEMES AND VARIATIONS

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WAYNE WEITEN
DOUG McCANN

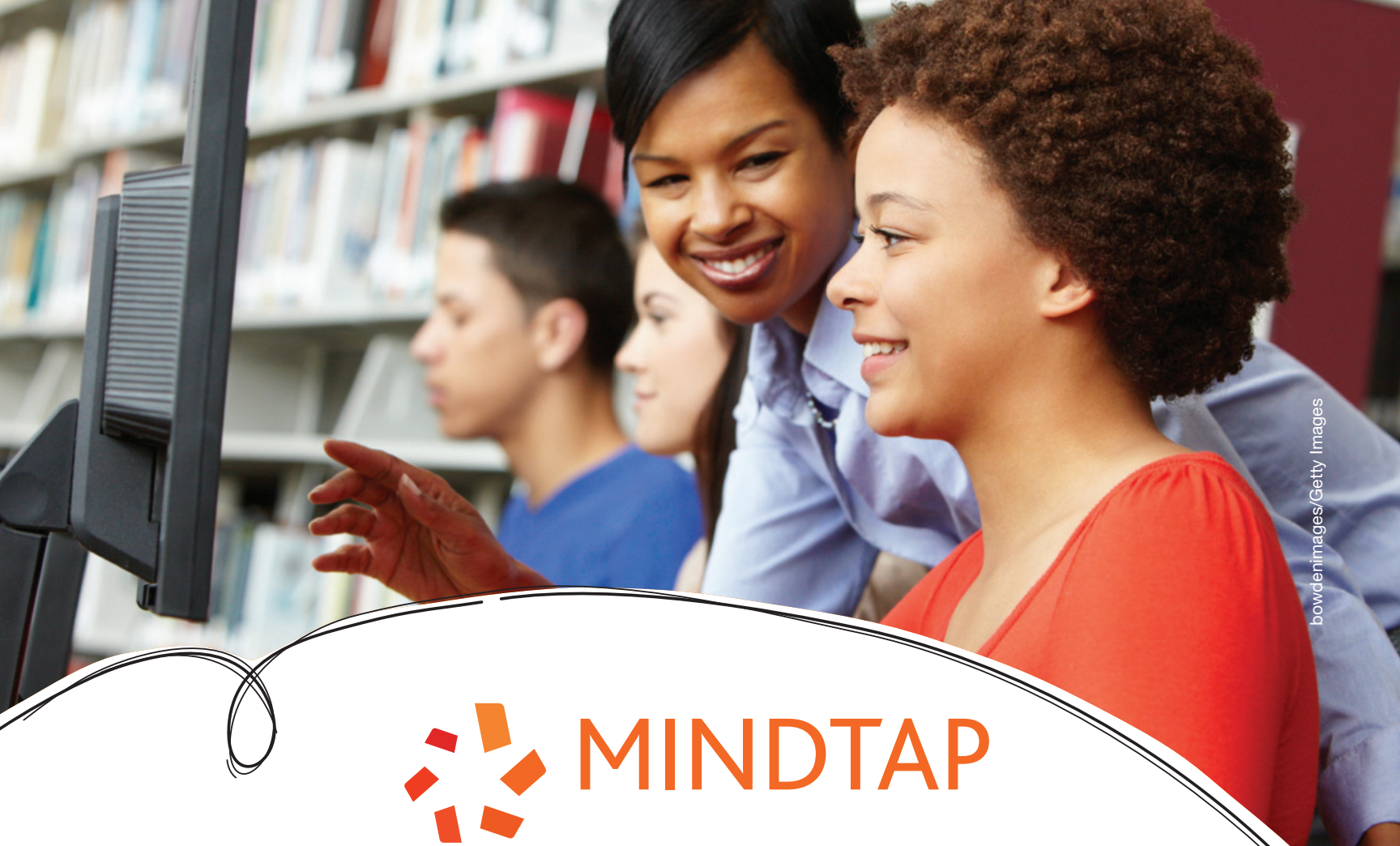
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TO ME, SCIENCE IS JUST ORGANIZED CURIOSITY. IT'S JUST TRYING TO UNDERSTAND HOW EVERYTHING WORKS AND HOW IT ALL FITS TOGETHER AND WHY. ... AND SCIENCE IS JUST A WAY TO TRY AND FIGURE OUT THE ANSWERS — JUST TRYING TO ORGANIZE THAT CURIOSITY, AND BUILD ON THE KNOWLEDGE OF IT. **TO ME THAT'S THE CORE OF EVERYTHING.** IF YOU'RE NOT CURIOUS ABOUT THE WORLD, AND ABOUT OUR PLACE IN IT, THEN YOU'RE MISSING SUCH AN IMPORTANT PART OF LIFE. YOU'RE NOT GROWING AND EXPANDING AND INCREASING YOUR APPRECIATION OF IT.

— CELEBRATED ASTRONAUT CHRIS HADFIELD: CURIOSITY IS “THE CORE OF EVERYTHING,”
OCTOBER 7, 2014, BY SPEAKERS' SPOTLIGHT, BY SARAH GRAY

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WAYNE WEITEN

UNIVERSITY OF NEVADA, LAS VEGAS

DOUG McCANN

YORK UNIVERSITY

WITH CONTRIBUTIONS FROM

MARK HOLDER

UNIVERSITY OF BRITISH COLUMBIA

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**For Nancy, Harry,
Jackie, Lucy, and Tuck—D. M.**

**Beth and T.J.,
this one is for you—W. W.**

ABOUT THE AUTHORS

WAYNE WEITEN is a graduate of Bradley University and received his Ph.D. in social psychology from the University of Illinois, Chicago in 1981. He has taught at the College of DuPage and Santa Clara University, and currently teaches at the University of Nevada, Las Vegas. He has received distinguished teaching awards from Division Two of the American Psychological Association (APA) and from the College of DuPage. He is a Fellow of Divisions 1, 2, and 8 of the American Psychological Association and a Fellow of the Midwestern Psychological Association. In 1991, he helped chair the APA National Conference on Enhancing the Quality of Undergraduate Education in Psychology. He is a former President of the Society for the Teaching of Psychology and the Rocky Mountain Psychological Association. In 2006, one of the five national teaching awards given annually by the Society for the Teaching of Psychology was named in his honour. Weiten has conducted research on a wide range of topics, including educational measurement, jury decision making, attribution theory, pressure as a form of stress, and the technology of textbooks. He is also the co-author of *Psychology Applied to Modern Life: Adjustment in the 21st Century* (with Dana S. Dunn and Elizabeth Yost Hammer, Cengage, 2015, 11th ed.). Weiten has created an educational CD-ROM titled *PsykTrek*:

A Multimedia Introduction to Psychology, and he recently co-authored a chapter on the Introductory Psychology course for *The Oxford Handbook of Psychology Education* (Weiten & Houska, 2015).

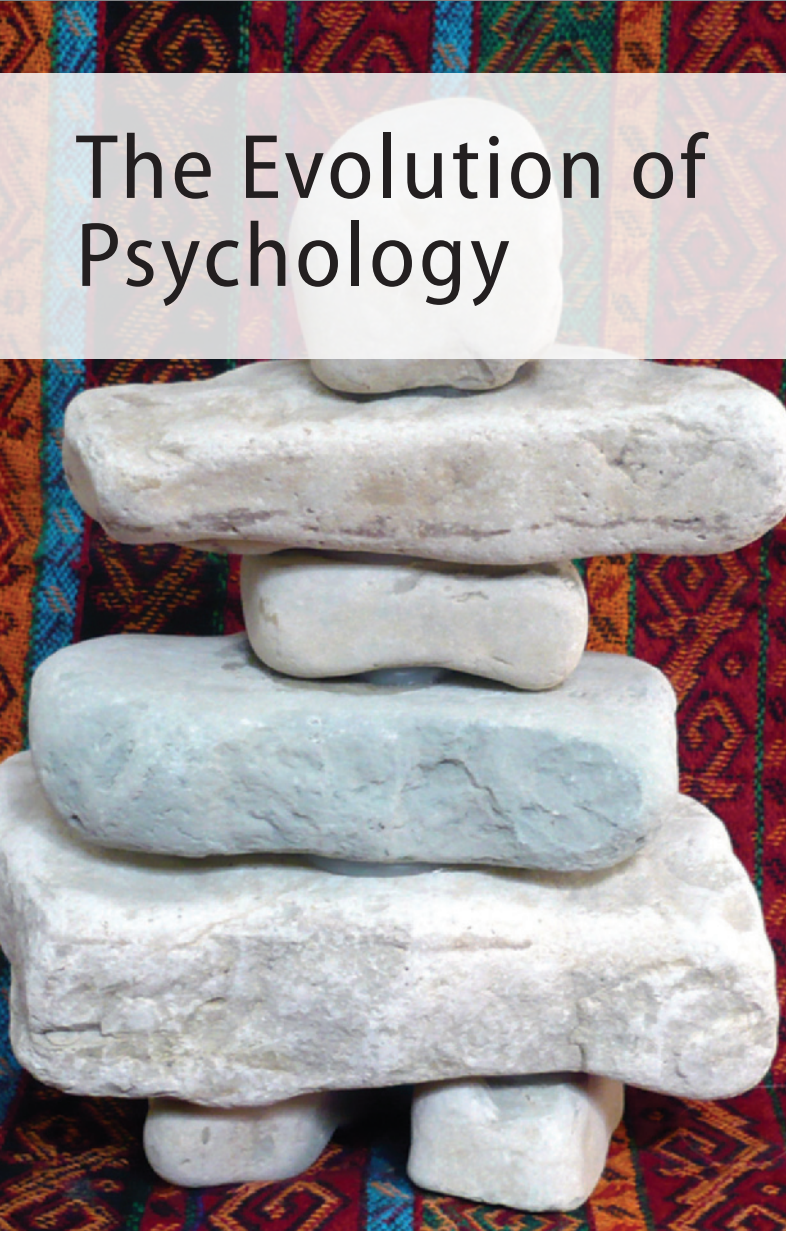
DOUG McCANN received his B.A. from the University of Waterloo and his M.A. and Ph.D. from the University of Western Ontario. Following completion of his Ph.D., he did a post-doctoral fellowship at Ohio State University. He has been a member of the Psychology Department at York University since 1983. At York he has taught at the graduate level in the Clinical, Developmental, and Social/Personality programs and at the undergraduate level. His current teaching interests focus on Introductory Psychology, Social Psychology, and the Psychology of Depression. He has won a variety of teaching awards while at York University and has served in several administrative positions there, most recently as Director of the Graduate Program in Psychology at York University. His research interests focus on social cognition, information processing models of depression, mindfulness meditation, and the effects of childhood trauma on emotional processing. He would be delighted to receive comments about this textbook—just email him at dmccann@yorku.ca.

BRIEF CONTENTS

Chapter 1	The Evolution of Psychology	1
Chapter 2	The Research Enterprise in Psychology	32
Chapter 3	The Biological Bases of Behaviour	66
Chapter 4	Sensation and Perception	110
Chapter 5	Variations in Consciousness	154
Chapter 6	Learning	194
Chapter 7	Human Memory	238
Chapter 8	Language and Thought	278
Chapter 9	Intelligence and Psychological Testing	311
Chapter 10	Motivation and Emotion	346
Chapter 11	Human Development across the Life Span	386
Chapter 12	Personality: Theory, Research, and Assessment	435
Chapter 13	Social Behaviour	473
Chapter 14	Stress, Coping, and Health	517
Chapter 15	Psychological Disorders	552
Chapter 16	Treatment of Psychological Disorders	605
Appendix A:	Answers to Concept Checks	A-1
Appendix B:	Statistical Methods	A-6
References		R-1
Name Index		I-1
Subject Index		I-37

CHAPTER 1

The Evolution of Psychology



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From Speculation to Science: How Psychology Developed 3

- A New Science Is Born 4
- The Battle of the “Schools” Begins: Structuralism versus Functionalism 4
- Watson Alters Psychology’s Course as Behaviourism Makes Its Debut 6
- Freud Brings the Unconscious into the Picture 7
- Skinner Questions Free Will as Behaviourism Flourishes 8
- The Humanists Revolt 9
- Psychology in Canada 11
- Psychology Comes of Age as a Profession 12
- Cognition and Neuroscience in Psychology 13
- A Focus on Culture and Diversity 15
- Psychology Adapts: The Emergence of Evolutionary Psychology 15

An Illustrated Overview of Psychology’s History 16

- Psychology Moves in a Positive Direction: The Positive Psychology Movement 18

Psychology Today: Vigorous and Diversified 19

- Research Areas in Psychology 19
- Professional Specialties in Psychology 20

Putting It in Perspective: Seven Key Themes 22

- Themes Related to Psychology as a Field of Study 22
- Themes Related to Psychology’s Subject Matter 24

PERSONAL APPLICATION

- Improving Academic Performance 26

CRITICAL THINKING APPLICATION

- Developing Critical Thinking Skills: An Introduction 28

Concept Chart 30

CHAPTER 2

The Scientific Approach to Behaviour 33

- Goals of the Scientific Enterprise 33
- Steps in a Scientific Investigation 34
- Advantages of the Scientific Approach 37

Looking for Causes: Experimental Research 38

- Independent and Dependent Variables 38
- Experimental and Control Groups 38
- Extraneous Variables 39
- Variations in Designing Experiments 40
- Advantages and Disadvantages of Experimental Research 41

Looking for Links: Descriptive/ Correlational Research 42

- Naturalistic Observation 42
- Case Studies 43
- Surveys 44
- Advantages and Disadvantages of Descriptive/
Correlational Research 45

Looking for Conclusions: Statistics and Research 45

- Descriptive Statistics 46

An Illustrated Overview of Key Research Methods in Psychology 48

Looking for Flaws: Evaluating Research 53

- Sampling Bias 53
- Placebo Effects 54
- Distortions in Self-Report Data 55
- Experimenter Bias 55

Looking at Ethics: Do the Ends Justify the Means? 56

- The Question of Animal Research 58
- Ethical Guidelines for Research in Psychology in Canada 59

Putting It in Perspective: Themes 1 and 7 59

PERSONAL APPLICATION

- Finding and Reading Journal Articles 60

The Research Enterprise in Psychology



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CRITICAL THINKING APPLICATION

- The Perils of Anecdotal Evidence: "I Have a Friend Who . . ." 62

Concept Chart 64

CHAPTER 3

The Biological Bases of Behaviour

The Anatomy of the Nervous System	68
Glial Cells	68
Neurons	69
The Function of Neurons: Information Transmission	70
Neurotransmitters and Behaviour	76
Organization of the Nervous System	80
The Peripheral Nervous System	80
The Central Nervous System	82
Looking Inside the Brain: Research Methods	83
Transcranial Magnetic Stimulation	85
The Brain and Behaviour	86
The Hindbrain	86
The Midbrain	86
The Forebrain	86
The Limbic System: The Centre of Emotion	88
The Plasticity of the Brain	90
Right Brain/Left Brain: Cerebral Laterality	92
Bisecting the Brain: Split-Brain Research	92
Hemispheric Specialization in the Intact Brain	93
The Endocrine System: Another Way to Communicate	95
Heredity and Behaviour: Is It All in the Genes?	96
Basic Principles of Genetics	96
Investigating Hereditary Influence: Research Methods	97
The Interplay of Heredity and Environment	100
Epigenetics: The Interplay of Heredity and Environment	100
The Evolutionary Bases of Behaviour	101
Darwin's Insights	101
Later Refinements to Evolutionary Theory	102
Behaviours as Adaptive Traits	102
Putting It in Perspective: Themes 1, 4, and 6	103
PERSONAL APPLICATION	
Evaluating the Concept of "Two Minds in One"	104
CRITICAL THINKING APPLICATION	
Building Better Brains: The Perils of Extrapolation	106
Concept Chart	108

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CHAPTER 4

Psychophysics: Basic Concepts and Issues 111

- Thresholds: Looking for Limits 112
- Signal-Detection Theory 113
- Perception without Awareness 113
- Sensory Adaptation 114

Our Sense of Sight: The Visual System 114

- The Stimulus: Light 114
- The Eye: A Living Optical Instrument 114
- The Retina: The Brain's Envoy in the Eye 116
- Vision and the Brain 118
- Vision for Perception and Vision for Action 120
- Viewing the World in Colour 121

The Visual System: Perceptual Processes 124

- Perceiving Forms, Patterns, and Objects 124
- Looking at the Whole Picture: Gestalt Principles 126
- Perceiving Depth or Distance 129
- Perceptual Constancies in Vision 131
- The Power of Misleading Cues: Visual Illusions 131

Our Sense of Hearing: The Auditory System 133

- The Stimulus: Sound 133
- Human Hearing Capacities 134
- Sensory Processing in the Ear 134
- Auditory Perception: Theories of Hearing 136
- Auditory Localization: Perceiving Sources of Sound 137

Our Chemical Senses: Taste and Smell 138

- Taste: The Gustatory System 138
- Smell: The Olfactory System 140

Our Sense of Touch: Sensory Systems in the Skin 141

- Feeling Pressure 141
- Feeling Pain 142

Our Other Senses 144

- The Kinesthetic System 144
- The Vestibular System 144

Putting It in Perspective: Themes 2, 5, and 7 145

An Illustrated Overview of Five Major Senses 146

PERSONAL APPLICATION

Appreciating Art and Illusion 148

Sensation and Perception



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CRITICAL THINKING APPLICATION

Recognizing Contrast Effects: It's All Relative 150

Concept Chart 152

CHAPTER 5

Variations in Consciousness



The Nature of Consciousness 156

Variations in Awareness and Control 156

Consciousness and Brain Activity 157

Biological Rhythms and Sleep 158

The Role of Circadian Rhythms 158

Ignoring Circadian Rhythms 158

Realigning Circadian Rhythms 159

The Sleep and Waking Cycle 160

Cycling through the Stages of Sleep 160

Repeating the Cycle 161

Age Trends in Sleep 162

Culture and Sleep 164

The Neural and Evolutionary Bases of Sleep 164

Doing Without: Sleep Deprivation 165

Problems in the Night: Sleep Disorders 167

The World of Dreams 170

The Contents of Dreams 171

Links between Dreams and Waking Life 171

Culture and Dreams 172

Theories of Dreaming 172

Hypnosis: Altered Consciousness or Role Playing? 174

Hypnotic Induction and Susceptibility 174

Theories of Hypnosis 175

Meditation: Pure Consciousness or Relaxation? 176

Long-Term Benefits 177

Altering Consciousness with Drugs 178

Principal Abused Drugs and Their Effects 178

Factors Influencing Drug Effects 182

Mechanisms of Drug Action 183

Drug Dependence 184

Drugs and Health 185

Putting It in Perspective: Themes 2, 3, 4, 5, and 7 187

PERSONAL APPLICATION

Addressing Practical Questions about Sleep and Dreams 188

CRITICAL THINKING APPLICATION

Is Alcoholism a Disease? The Power of Definitions 190

Concept Chart 192

CHAPTER 6

Classical Conditioning 196

Pavlov's Demonstration: "Psychic Reflexes" 196

Terminology and Procedures 197

Classical Conditioning in Everyday Life 198

Basic Processes in Classical Conditioning 201

Stimulus Generalization and the Mysterious Case of Little Albert 202

Cognition and Classical Conditioning 205

Evolutionary and Biological Effects on Conditioning 205

Operant Conditioning 207

Thorndike's Law of Effect 207

Skinner's Demonstration: It's All a Matter of Consequences 208

Terminology and Procedures 209

Basic Processes in Operant Conditioning 211

Reinforcement and Superstitious Behaviour 213

Schedules of Reinforcement 214

Positive Reinforcement versus Negative Reinforcement 216

Punishment: Consequences That Weaken Responses 218

Cognitive Processes in Conditioning: Latent Learning and Cognitive Maps 220

Evolutionary and Biological Effects on Conditioning 221

Observational Learning 223

Basic Processes 224

Observational Learning and the Media Violence Controversy 224

Observational Learning and the Brain: Mirror Neurons 227

An Illustrated Overview of Three Types of Learning 228

Putting It in Perspective: Themes 3 and 6 230

PERSONAL APPLICATION

Achieving Self-Control through Behaviour Modification 231

CRITICAL THINKING APPLICATION

Manipulating Emotions: Pavlov and Persuasion 234

Concept Chart 236

Learning



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CHAPTER 7

Human Memory

Encoding: Getting Information into Memory 240

The Role of Attention 240

Levels of Processing 241

Enriching Encoding 242

Storage: Maintaining Information in Memory 244

Sensory Memory 244

Short-Term Memory 245

Long-Term Memory 248

How Is Knowledge Represented and Organized in Memory? 248

Retrieval: Getting Information Out of Memory 251

Using Cues to Aid Retrieval 251

Reinstating the Context of an Event 251

Reconstructing Memories 252

Source Monitoring 253

Forgetting: When Memory Lapses 254

How Quickly We Forget: Ebbinghaus's Forgetting Curve 254

Measures of Forgetting 254

Why We Forget? 255

The Repressed Memories Controversy 258

Seven Sins of Memory: How Memory Goes Wrong 260

In Search of the Memory Trace: The Physiology of Memory 262

The Neural Circuitry of Memory 262

The Anatomy of Memory 263

Systems and Types of Memory 265

Implicit versus Explicit Memory 265

Declarative versus Nondeclarative Memory 266

Semantic versus Episodic Memory 267

Prospective versus Retrospective Memory 268

Putting It in Perspective: Themes 2, 4, and 7 270

PERSONAL APPLICATION

Improving Everyday Memory 271

CRITICAL THINKING APPLICATION

Understanding the Fallibility of Eyewitness Accounts 274

Concept Chart 276

CHAPTER 8

Language: Turning Thoughts into Words 280

- What Is Language? 280
- The Structure of Language 280
- Milestones in Language Development 281
- Learning More than One Language: Bilingualism 284
- Can Animals Develop Language? 286
- Language in an Evolutionary Context 287
- Theories of Language Acquisition 288
- Culture, Language, and Thought 289

Problem Solving: In Search of Solutions 290

- Types of Problems 290
- Barriers to Effective Problem Solving 292
- Approaches to Problem Solving 293
- Culture, Cognitive Style, and Problem Solving 296

Decision Making: Choices and Chances 298

- Making Choices: Basic Strategies 298
- Taking Chances: Factors Weighed in Risky Decisions 299
- Heuristics in Judging Probabilities 300
- The Tendency to Ignore Base Rates 301
- The Conjunction Fallacy 301
- Behavioural Economics 302
- Evolutionary Analyses of Flaws in Human Decision Making 302
- Thinking Fast and Thinking Slow: Two Systems of Thought 303

Putting It in Perspective: Themes 1, 5, 6, and 7 304

PERSONAL APPLICATION


- Understanding Pitfalls in Reasoning about Decisions 305

CRITICAL THINKING APPLICATION

- Shaping Thought with Language: “Only a Naïve Moron Would Believe That” 308

Concept Chart 310

Language and Thought



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CHAPTER 9

Intelligence and Psychological Testing

Key Concepts in Psychological Testing	313
Standardization and Norms	313
Reliability	314
Validity	314
The Evolution of Intelligence Testing and Our Understanding of the Construct of Intelligence	315
Origins of Modern Intelligence Testing	315
The Debate about the Structure of Intelligence	316
Broadening the Concept of Intelligence	319
Basic Questions about Intelligence Testing	323
What Do Modern IQ Scores Mean?	323
Do Intelligence Tests Have Adequate Reliability?	324
Do Intelligence Tests Have Adequate Validity?	324
Do Intelligence Tests Predict Vocational Success?	325
Are IQ Tests Widely Used in Other Cultures?	326
Extremes of Intelligence	326
Intellectual Disability	326
Giftedness	329
Heredity and Environment as Determinants of Intelligence	331
Evidence for Hereditary Influence	331
Evidence for Environmental Influence	333
The Interaction of Heredity and Environment	334
Cultural Differences in IQ Scores	335
Putting It in Perspective: Themes 3, 5, and 6	338
PERSONAL APPLICATION	
Understanding Creativity	339
CRITICAL THINKING APPLICATION	
The Intelligence Debate, Appeals to Ignorance, and Reification	342
Concept Chart	344

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CHAPTER 10

Motivational Theories and Concepts 348

- Drive Theories 348
- Incentive Theories 348
- Evolutionary Theories 349

The Motivation of Hunger and Eating 349

- Biological Factors in the Regulation of Hunger 349
- Environmental Factors in the Regulation of Hunger 351
- Eating and Weight: The Roots of Obesity 352

Sexual Motivation and Behaviour 356

- The Human Sexual Response 356
- Evolutionary Analyses of Human Sexual Behaviour 358
- The Mystery of Sexual Orientation 360

The Need to Belong: Affiliation Motivation 363

- Ostracism and the Fear of Rejection 363

Achievement: In Search of Excellence 364

- Individual Differences in the Need for Achievement 364
- Situational Determinants of Achievement Behaviour 365

The Elements of Emotional Experience 367

- The Cognitive Component: Subjective Feelings 367
- The Physiological Component: Diffuse and Multifaceted 368
- The Behavioural Component: Nonverbal Expressiveness 370
- Culture and the Elements of Emotion 372

Theories of Emotion 374

- James–Lange Theory 374
- Cannon–Bard Theory 374
- Schachter’s Two-Factor Theory 375
- Evolutionary Theories of Emotion 376

Putting It in Perspective: Themes 2, 3, 4, 5, and 6 377

PERSONAL APPLICATION

- Exploring the Ingredients of Happiness 378

CRITICAL THINKING APPLICATION

- Analyzing Arguments: Making Sense Out of Controversy 382

Concept Chart 384

Motivation and Emotion



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CHAPTER 11

Human Development across the Life Span

Progress before Birth: Prenatal Development 387

The Course of Prenatal Development 388

Environmental Factors and Prenatal Development 389

The Wondrous Years of Childhood 392

Exploring the World: Motor Development 392

Easy and Difficult Babies: Differences in Temperament 394

Early Emotional Development: Attachment 395

Personality Development in Childhood 398

The Growth of Thought: Cognitive Development 400

The Development of Moral Reasoning 407

The Transition of Adolescence 409

Physiological Changes 409

Neural Development: The Teen Brain 410

Time of Turmoil? 411

The Search for Identity 412

Emerging Adulthood as a New Developmental Stage 413

The Expanse of Adulthood 414

Personality Development 414

Transitions in Family Life 415

Aging and Physiological Changes 417

Aging and Neural Changes 419

Aging and Cognitive Changes 420

Death and Dying 421

An Illustrated Overview of Human Development 422

Putting It in Perspective: Themes 2, 3, 4, 5, and 6 426

PERSONAL APPLICATION

Understanding Gender Differences 427

CRITICAL THINKING APPLICATION

Are Fathers Essential to Children's Well-Being? 431

Concept Chart 433

CHAPTER 12

The Nature of Personality 437

Defining Personality: Consistency and Distinctiveness 437

Personality Traits: Dispositions and Dimensions 437

The Five-Factor Model of Personality Traits 438

Psychodynamic Perspectives 439

Freud's Psychoanalytic Theory 439

Jung's Analytical Psychology 445

Adler's Individual Psychology 446

Evaluating Psychodynamic Perspectives 447

Behavioural Perspectives 448

Skinner's Ideas Applied to Personality 448

Bandura's Social Cognitive Theory 449

Mischel and the Person–Situation Controversy 451

Evaluating Behavioural Perspectives 452

Humanistic Perspectives 452

Rogers's Person-Centred Theory 452

Maslow's Theory of Self-Actualization 454

Evaluating Humanistic Perspectives 456

Biological Perspectives 457

Eysenck's Theory 457

Behavioural Genetics and Personality 457

The Neuroscience of Personality 458

The Evolutionary Approach to Personality 459

Evaluating Biological Perspectives 459

Four Views of Personality: An Illustrated Overview of Major Theories of Personality 460

Culture and Personality 462

Putting It in Perspective: Themes 2, 3, and 5 464

PERSONAL APPLICATION

Understanding Personality Assessment 466

CRITICAL THINKING APPLICATION

Hindsight in Everyday Analyses of Personality 469

Concept Chart 471

Personality: Theory, Research, and Assessment



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CHAPTER 13

Social Behaviour

Person Perception: Forming Impressions of Others 475

- Effects of Physical Appearance 476
- Cognitive Schemas 477
- Stereotypes 478
- Subjectivity and Bias in Person Perception 479
- An Evolutionary Perspective on Bias in Person Perception 479

Attribution Processes: Explaining Behaviour 479

- Internal versus External Attributions 480
- Attributions for Success and Failure 480
- Bias in Attribution 481
- Culture and Attributions 482
- Close Relationships: Liking and Loving 483
- Key Factors in Attraction 483
- Perspectives on the Mystery of Love 485
- Culture and Close Relationships 486
- The Internet and Close Relationships 487
- An Evolutionary Perspective on Attraction 488

Attitudes: Making Social Judgments 489

- Components and Dimensions of Attitudes 489
- Implicit Attitudes: Looking beneath the Surface 490
- Trying to Change Attitudes: Factors in Persuasion 491
- Theories of Attitude Formation and Change 493

Conformity and Obedience: Yielding to Others 497

- Conformity 497
- Obedience 498
- Cultural Variations in Conformity and Obedience 500
- The Power of the Situation: The Stanford Prison Simulation 500

Behaviour in Groups: Joining with Others 501

- Behaviour Alone and in Groups: The Case of the Bystander Effect 502
- Group Productivity and Social Loafing 502
- Decision Making in Groups 503

Social Neuroscience 505

- A Neuroscience Perspective on Social Psychology 505
- Topics in Social Neuroscience 506

Putting It in Perspective: Themes 1, 5, and 7 507

PERSONAL APPLICATION

- Understanding Prejudice 509

CRITICAL THINKING APPLICATION

- Whom Can You Trust? Analyzing Credibility and Social Influence Tactics 513

Concept Chart 515

CHAPTER 14

The Nature of Stress 519

Stress as an Everyday Event 519

Appraisal: Stress Lies in the Eye of the Beholder 520

Major Types of Stress 520

Frustration 520

Internal Conflict 521

Change 522

Pressure 522

Responding to Stress 523

Emotional Responses 523

Physiological Responses 525

Behavioural Responses 527

The Effects of Stress on Psychological Functioning 530

Burnout 531

Post-Traumatic Stress Disorder 531

The Effects of Stress on Physical Health 532

Personality, Hostility, and Heart Disease 533

Emotional Reactions, Depression, and Heart Disease 533

Stress, Other Diseases, and Immune Functioning 534

Sizing Up the Link between Stress and Illness 535

Factors Moderating the Impact of Stress 536

Social Support 536

Optimism, Conscientiousness, and Hardiness 537

Stress Mindset 538

Positive Effects of Stress 539

Health-Impairing Behaviour 539

Smoking 539

Lack of Exercise 540

Alcohol and Drug Use 541

Behaviour and AIDS 541

Reactions to Illness 542

Deciding to Seek Treatment 542

Communicating with Health Providers 543

Adhering to Medical Advice 543

Putting It in Perspective: Themes 4 and 7 544

PERSONAL APPLICATION

Improving Coping and Stress Management 545

Stress, Coping, and Health



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CRITICAL THINKING APPLICATION

Thinking Rationally about Health Statistics and Decisions 548

Concept Chart 550

CHAPTER 15

Psychological Disorders

Abnormal Behaviour: Myths, Realities, and Controversies 554

- The Medical Model Applied to Abnormal Behaviour 554
- Criteria of Abnormal Behaviour 556
- Stereotypes of Psychological Disorders 557
- Psychodiagnosis: The Classification of Disorders 558
- Alternative Diagnostic Systems 559
- The Prevalence of Psychological Disorders 559

Anxiety, Obsessive-Compulsive and Post-Traumatic Stress Disorders 561

- Anxiety Disorders 561
- Obsessive-Compulsive Disorder 562
- Post-Traumatic Stress Disorder (PTSD) 565
- Etiology of Anxiety and Anxiety-Related Disorders 566

Dissociative Disorders 568

- Description 568
- Etiology of Dissociative Disorders 569

Depressive and Bipolar Disorders 569

- Major Depressive Disorder 571
- Bipolar Disorder 572
- Diversity in Mood Disorders 573
- Mood Disorders and Suicide 574
- Etiology of Depressive and Bipolar Disorders 575

Schizophrenia 579

- General Symptoms 580
- Etiology of Schizophrenia 581

An Illustrated Overview of Three Categories of Psychological Disorders 586

Personality Disorders 588

- Antisocial, Borderline, and Narcissistic Personality Disorders 588
- Etiology of Personality Disorders 590

Neurodevelopmental Disorders 590

- Autism Spectrum Disorder 591

Psychological Disorders and the Law 592

- Insanity 593

Culture and Pathology 594

- Are Equivalent Disorders Found around the World? 594
- Are Symptom Patterns Culturally Invariant? 595

Putting It in Perspective: Themes 3, 4, 5, and 6 595

PERSONAL APPLICATION

- Understanding Eating Disorders 597

CRITICAL THINKING APPLICATION

- Working with Probabilities in Thinking about Mental Illness 600

Concept Chart 603

CHAPTER 16

The Elements of the Treatment Process 607

- Treatments: How Many Types Are There? 607
- Clients: Who Seeks Therapy? 607
- Therapists: Who Provides Professional Treatment? 608

Insight Therapies 610

- Psychoanalysis 610
- Client-Centred Therapy 613
- Therapies Inspired by Positive Psychology 614
- Group Therapy 615
- Couples and Family Therapy 616
- How Effective Are Insight Therapies? 617
- How Do Insight Therapies Work? 617

Behaviour Therapies 618

- Systematic Desensitization 618
- Aversion Therapy 620
- Social Skills Training 620
- Cognitive-Behavioural Therapies 621
- How Effective Are Behaviour Therapies? 623

Biomedical Therapies 624

- Treatment with Drugs 624
- Electroconvulsive Therapy (ECT) 627
- New Brain Stimulation Techniques 629

An Illustrated Overview of Five Major Approaches to Treatment 630

Current Trends and Issues in Treatment 632

- Blending Approaches to Treatment 632
- Increasing Multicultural Sensitivity in Treatment 632
- Using Technology to Expand the Delivery of Clinical Services 634

Institutional Treatment in Transition 635

- Disenchantment with Mental Hospitals 635
- Deinstitutionalization 636

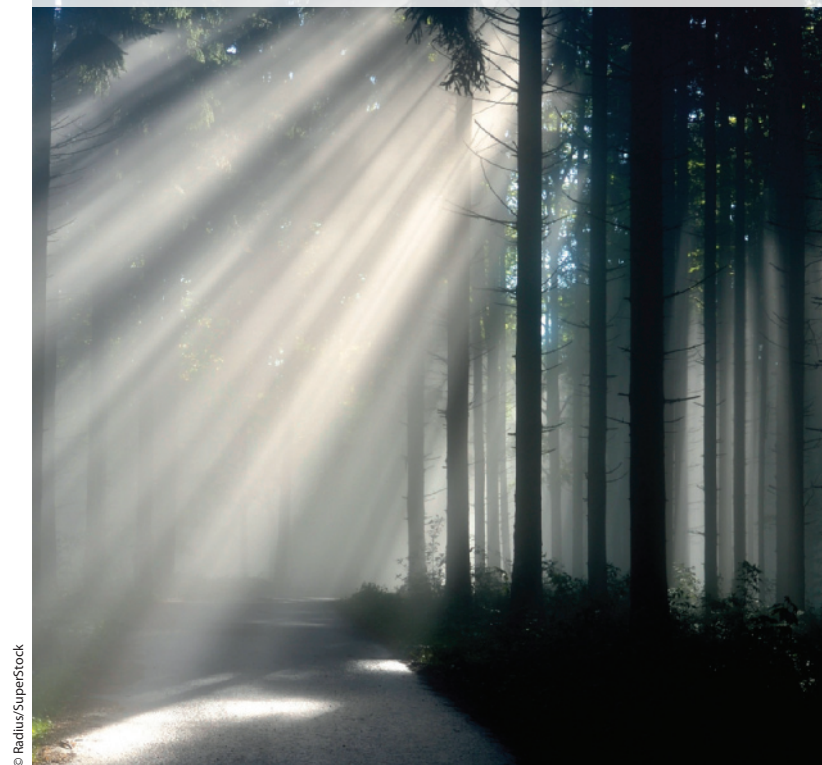
Mental Illness, the Revolving Door, and Homelessness 637

Putting It in Perspective: Themes 2 and 5 637

PERSONAL APPLICATION

Looking for a Therapist 639

Treatment of Psychological Disorders



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CRITICAL THINKING APPLICATION

From Crisis to Wellness—But Was It the Therapy? 642

Concept Chart 644

WELCOME TO *PSYCHOLOGY: THEMES AND VARIATIONS*

Welcome to the fifth Canadian edition of *Psychology: Themes and Variations*. Not only has this book been extensively updated and revised, but we have managed to do all of this while producing a text that is considerably shorter than our previous editions. A good textbook must evolve with the field of inquiry it covers, as well as new directions in higher education. We have updated and revised this edition of the text extensively to reflect recent changes and findings in the field. We have included references to almost 1000 new articles and scholarly works. We have also shortened the text. The last decade has seen a pronounced trend toward greater brevity in textbooks in psychology, as well as many other fields. This trend is not limited to undergraduate texts, as we have also witnessed it in the medical textbooks that we often consult on topics such as neuroscience, sleep, pediatrics, and psychiatry. We have revised our text not only to reflect recent changes in psychology, but have done so with a Canadian context in mind. As just one example, we have included new data, research, and discussion reflecting the experiences of Indigenous Canadians, including, but not limited to, the residential school system in Canada.

In writing this text we have several objectives in mind. If we had to sum up in a single sentence what we hope will distinguish this text, the sentence would be this: We have set out to create a *paradox* instead of a *compromise*.

An introductory psychology text must satisfy two disparate audiences: professors and students. Because of the tension between the divergent needs and preferences of these audiences, textbook authors usually indicate that they have attempted to strike a compromise between being theoretical versus practical, comprehensive versus comprehensible, research oriented versus applied, rigorous versus accessible, and so forth. However, we believe that many of these dichotomies are false. As Kurt Lewin once remarked, “What could be more practical than a good theory?” Similarly, is rigorous really the opposite of accessible? Not in our courses in psychology. We maintain that many of the antagonistic goals that we strive for in our textbooks only *seem* incompatible and that we may not need to make compromises as often as we assume.

In our view, a good introductory textbook is a paradox in that it integrates characteristics and goals that appear contradictory. With this in mind, we

have endeavoured to write a text that is paradoxical in three ways. First, in surveying psychology’s broad range of content, we have tried to show that our interests are characterized by diversity *and* unity. Second, we have emphasized both research *and* application and how they work in harmony. Finally, we have aspired to write a book that is challenging to think about *and* easy to learn from. Let’s take a closer look at these goals.

Goals

1. *To show both the unity and the diversity of psychology’s subject matter.* Students entering an introductory psychology course are often unaware of the immense diversity of subjects studied by psychologists. We find this diversity to be part of psychology’s charm, and throughout the book we highlight the enormous range of questions and issues addressed by psychology. Of course, psychology’s diversity proves disconcerting for some students, who see little continuity between such disparate areas of research as physiology, motivation, cognition, and abnormal behaviour. Indeed, in this era of specialization, even some psychologists express concern about the fragmentation of the field.

However, we believe there is considerable overlap among the subfields of psychology and that we should emphasize their common core by accenting the connections and similarities among them. Consequently, we portray psychology as an integrated whole rather than as a mosaic of loosely related parts. A principal goal of this text, then, is to highlight the unity in psychology’s intellectual heritage (the *themes*), as well as the diversity of psychology’s interests and uses (the *variations*).

2. *To illuminate the process of research and its intimate link to application.* For us, a research-oriented book is not one that bulges with summaries of many studies but one that enhances students’ appreciation of the logic and excitement of empirical inquiry. We want students to appreciate the strengths of the empirical approach and to see scientific psychology as a creative effort to solve intriguing behavioural puzzles. For this reason, the text emphasizes not only *what* psychologists know (and don’t know) but *how* they attempt to find out. It examines methods in some detail and encourages students to adopt the skeptical attitude of a scientist and to think critically about claims regarding behaviour.

Learning the virtues of research should not mean that students cannot also satisfy their desire for concrete, personally useful information about the challenges of everyday life. Most researchers believe that psychology has a great deal to offer those outside the field and that psychologists should share the practical implications of their work. In this text, practical insights are carefully qualified and closely tied to data, so that students can see the interdependence of research and application. We find that students come to appreciate the science of psychology more when they see that worthwhile practical applications are derived from careful research and sound theory.

3. *To make the textbook challenging to think about and easy to learn from.* Perhaps most of all, we have sought to create a *book of ideas* rather than a compendium of studies. We consistently emphasize concepts and theories over facts, and focus on major issues and tough questions that cut across the subfields of psychology (e.g., the extent to which behaviour is governed by nature, nurture, and their interaction), as opposed to parochial debates (e.g., the merits of averaging versus adding in impression formation). Challenging students to think also means urging them to confront the complexity and ambiguity of psychological knowledge. Hence, the text doesn't skirt around grey areas, unresolved questions, and theoretical controversies. Instead, it encourages readers to contemplate open-ended questions, to examine their assumptions about behaviour, and to apply psychological concepts to their own lives. Our goal is not simply to describe psychology but to stimulate students' intellectual growth.

However, students can grapple with “the big issues and tough questions” only if they first master the basic concepts and principles of psychology—ideally, with as little struggle as possible. In our writing, we never forget that a textbook is a tool for teaching. Accordingly, we have taken great care to ensure that the book's content, organization, writing, illustrations, and pedagogical aids work in harmony to facilitate instruction and learning.

Admittedly, these goals are ambitious. If you're skeptical, you have every right to be. Let us explain how we have tried to realize these objectives.

Special Features

The book contains a variety of unusual features, each contributing in its own way to the book's paradoxical nature. These special elements include unifying themes, Personal Application sections, Critical Thinking Application sections, a didactic

illustration program, an integrated running glossary, Concept Checks, Key Learning Goals, and Concept Charts.

Unifying Themes

Chapter 1 introduces seven key ideas that serve as unifying themes throughout the text. The themes serve several purposes. First, they provide threads of continuity across chapters that help students see the connections among various areas of research in psychology. Second, as the themes evolve over the course of the book, they provide a forum for a relatively sophisticated discussion of enduring issues in psychology, thus helping to make this a “book of ideas.” Third, the themes focus a spotlight on a number of basic insights about psychology and its subject matter that should leave lasting impressions on your students.

In selecting the themes, the question we asked ourselves (and other instructors) was “What do we really want students to remember five years from now?” The resulting themes are grouped into two sets.

THEMES RELATED TO PSYCHOLOGY AS A FIELD OF STUDY

Theme 1: Psychology is empirical. This theme is used to enhance the student's appreciation of psychology's scientific nature and to demonstrate the advantages of empiricism over uncritical common sense and speculation. We also use this theme to encourage the reader to adopt a scientist's skeptical attitude and to engage in more critical thinking about information of all kinds.

Theme 2: Psychology is theoretically diverse.

Students are often confused by psychology's theoretical pluralism and view it as a weakness. We don't downplay or apologize for the field's theoretical diversity, because we believe that it is one of psychology's greatest strengths. Throughout the book, we provide concrete examples of how clashing theories have stimulated productive research, how converging on a question from several perspectives can yield increased understanding, and how competing theories are sometimes reconciled in the end.

Theme 3: Psychology evolves in a sociohistorical context.

This theme emphasizes that psychology is embedded in the ebb and flow of everyday life. The text shows how the spirit of the times has often shaped psychology's evolution and how progress in psychology leaves its mark on our society.

THEMES RELATED TO PSYCHOLOGY'S SUBJECT MATTER

Theme 4: Behaviour is determined by multiple causes. Throughout the book, we emphasize, and repeatedly illustrate, that behavioural processes are complex and that multifactorial causation is the rule. This theme is used to discourage simplistic, single-cause thinking and to encourage more critical reasoning.

Theme 5: Behaviour is shaped by cultural heritage. This theme is intended to enhance students' appreciation of how cultural factors moderate psychological processes and how the viewpoint of one's own culture can distort one's interpretation of the behaviour of people from other cultures. The discussions that elaborate on this theme do not simply celebrate diversity. They strike a careful balance—one that accurately reflects the research in this area—highlighting both cultural variations *and* similarities in behaviour.

Theme 6: Heredity and environment jointly influence behaviour. Repeatedly discussing this theme permits us to air out the nature versus nurture issue in all of its complexity. Over a series of chapters, students gradually learn how biology shapes behaviour, how experience shapes behaviour, and how scientists estimate the relative importance of each. Along the way, students will gain an in-depth appreciation of what it means when we say that heredity and environment interact.

Theme 7: People's experience of the world is highly subjective. All of us tend to forget the extent to which people view the world through their own personal lenses. This theme is used to explain the principles that underlie the subjectivity of human experience, to clarify its implications, and to repeatedly remind the readers that their view of the world is not the only legitimate view.

After introducing all seven themes in Chapter 1, we discuss different sets of themes in each chapter as they are relevant to the subject matter. The connections between a chapter's content and the unifying themes are highlighted in a standard section near the end of the chapter, "Putting It in Perspective," in which we reflect on the "lessons to be learned" from the chapter. We have not tried to make every chapter illustrate a certain number of themes. Rather, the themes were allowed to emerge naturally, and we found that two to five surfaced in any given chapter. The chart on the next page shows which themes are highlighted in each chapter. Colour-coded icons at the beginning of each "Putting It in Perspective" section indicate the specific themes featured in each chapter.

Personal Applications


To reinforce the pragmatic implications of theory and research stressed throughout the text, each chapter closes with a Personal Application section that highlights the practical side of psychology. Personal Applications devote two to three *pages* of text (rather than the usual box) to a single issue that should be of special interest to many of your students. Although most of the Personal Application sections have a "how to" character, they continue to review studies and summarize data in much the same way as the main body of each chapter. Thus, they portray research and application not as incompatible polarities but as two sides of the same coin. Many of the Personal Applications—such as those on finding and reading journal articles, understanding art and illusion, and improving stress management—provide topical coverage unusual for an introductory text.

Critical Thinking Applications

A great deal of unusual coverage can also be found in the Critical Thinking Applications that follow the Personal Applications. These applications are based on the assumption that critical thinking skills can be taught. They do not simply review research controversies, as is typically the case in other introductory texts. Instead, they introduce and model a host of critical thinking *skills*, such as looking for contradictory evidence or alternative explanations; recognizing anecdotal evidence, circular reasoning, hindsight bias, reification, weak analogies, and false dichotomies; evaluating arguments systematically; and working with cumulative and conjunctive probabilities.

The specific skills discussed in the Critical Thinking Applications are listed in the accompanying table (page xxviii), where they are organized into five categories using a taxonomy developed by Halpern (2004). In each chapter, some of these skills are applied to topics and issues related to the chapter's content. For instance, in the chapter that covers drug abuse (Chapter 5), the concept of alcoholism is used to highlight the immense power of definitions and to illustrate how circular reasoning can seem so seductive. Skills that are particularly important may surface in more than one chapter, so students see them applied in a variety of contexts. For example, in Chapter 7, students learn how hindsight bias can contaminate memory, and in Chapter 12 they see how hindsight can distort analyses of personality. Repeated practice across chapters should help students spontaneously recognize the relevance of specific critical thinking skills when they encounter certain types of information.

UNIFYING THEMES HIGHLIGHTED IN EACH CHAPTER

Chapter	THEME						
	1 Empiricism	2 Theoretical Diversity	3 Sociohistorical Context	4 Multifactorial Causation	5 Cultural Heritage	6 Heredity and Environment	7 Subjectivity of Experience
1. The Evolution of Psychology							
2. The Research Enterprise in Psychology							
3. The Biological Bases of Behaviour							
4. Sensation and Perception							
5. Variations in Consciousness							
6. Learning							
7. Human Memory							
8. Language and Thought							
9. Intelligence and Psychological Testing							
10. Motivation and Emotion							
11. Human Development across the Life Span							
12. Personality: Theory, Research, and Assessment							
13. Social Behaviour							
14. Stress, Coping, and Health							
15. Psychological Disorders							
16. Treatment of Psychological Disorders							

TAXONOMY OF SKILLS COVERED IN THE CRITICAL THINKING APPLICATIONS

Verbal Reasoning Skills	
Understanding the way definitions shape how people think about issues	Chapter 5
Identifying the source of definitions	Chapter 5
Avoiding the nominal fallacy in working with definitions and labels	Chapter 5
Understanding the way language can influence thought	Chapter 8
Recognizing semantic slanting	Chapter 8
Recognizing name-calling and anticipatory name-calling	Chapter 8
Recognizing and avoiding reification	Chapter 9
Argument/Persuasion Analysis Skills	
Understanding the elements of an argument	Chapter 10
Recognizing and avoiding common fallacies, such as irrelevant reasons, circular reasoning, slippery slope reasoning, weak analogies, and false dichotomies	Chapters 10 and 11
Evaluating arguments systematically	Chapter 10
Recognizing and avoiding appeals to ignorance	Chapter 9
Understanding how Pavlovian conditioning can be used to manipulate emotions	Chapter 6
Developing the ability to detect conditioning procedures used in the media	Chapter 6
Recognizing social influence strategies	Chapter 13
Judging the credibility of an information source	Chapter 13
Skills in Thinking as Hypothesis Testing	
Looking for alternative explanations for findings and events	Chapters 1, 9, and 11
Looking for contradictory evidence	Chapters 1, 3, and 9
Recognizing the limitations of anecdotal evidence	Chapters 2 and 15
Understanding the need to seek disconfirming evidence	Chapter 7
Understanding the limitations of correlational evidence	Chapters 11 and 14
Understanding the limitations of statistical significance	Chapter 14
Recognizing situations in which placebo effects might occur	Chapter 16
Skills in Working with Likelihood and Uncertainty	
Utilizing base rates in making predictions and evaluating probabilities	Chapter 14
Understanding cumulative probabilities	Chapter 15
Understanding conjunctive probabilities	Chapter 15
Understanding the limitations of the representativeness heuristic	Chapter 15
Understanding the limitations of the availability heuristic	Chapter 15
Recognizing situations in which regression toward the mean may occur	Chapter 16
Understanding the limits of extrapolation	Chapter 3
Decision-Making and Problem-Solving Skills	
Using evidence-based decision making	Chapter 2
Recognizing the bias in hindsight analysis	Chapters 7 and 12
Seeking information to reduce uncertainty	Chapter 14
Making risk–benefit assessments	Chapter 14
Generating and evaluating alternative courses of action	Chapter 14
Recognizing overconfidence in human cognition	Chapter 7
Understanding the limitations and fallibility of human memory	Chapter 7
Understanding how contrast effects can influence judgments and decisions	Chapter 4
Recognizing when extreme comparators are being used	Chapter 4

Reality Checks

Each chapter includes three or four Reality Checks, which address common misconceptions related to psychology and provide direct refutations of the misinformation. These Reality Checks are sprinkled throughout the chapters, appearing adjacent to the relevant material. Examples of misconceptions that are dispelled include the myth that B. F. Skinner raised his daughter in a Skinner box, which led to her becoming severely disturbed (Chapter 1); the notion that people use only 10 percent of their brains (Chapter 3); the assumption that people who are colour blind see the world in black and white (Chapter 4); and the idea that it is dangerous to awaken someone who is sleepwalking (Chapter 5).

Most of the misconceptions covered in these Reality Checks were addressed in previous editions, but not always with direct refutations. In other words, accurate information was provided on the issues, but usually without explicitly stating the misconception and providing a rebuttal. Why the change in strategy? The impetus was a fascinating article in *Teaching of Psychology* by Patricia Kowalski and Annette Taylor (2009). This article summarized evidence that students typically come into introductory psychology with a variety of misconceptions and that, for the most part, they tend to leave the course with their misconceptions intact. To see if this problem could be ameliorated, they tested the impact of direct refutations on students' misconceptions in the introductory course. Their data suggested that explicit repudiations of erroneous ideas reduce students' misconceptions more effectively than the simple provision of correct information. With that evidence in mind, we decided to craft this feature that explicitly confronts and disputes common fallacies that range from oversimplified to profoundly inaccurate. Because the Reality Checks mostly supplement the normal coverage in the text, they have been kept concise.

Featured Studies

Each chapter is accompanied in our online content by at least one Featured Study that provides a relatively detailed but clear summary of a particular piece of research. Each Featured Study is presented in the conventional purpose–method–results–discussion format seen in journal articles, followed by a comment in which we discuss why the study is featured (to illustrate a specific method, raise ethical issues, and so forth). By showing research methods in action, we hope to improve students' understanding of how research is done while also giving them a painless introduction to the basic format of journal articles. Additionally, the Featured Studies show how

complicated research can be, so students can better appreciate why scientists may disagree about the meaning of a study. The Featured Studies are fully incorporated into the flow of discourse in the text and are *not* presented as optional boxes.

In selecting the Featured Studies, we assembled a mixture of classic and recent studies that illustrate a wide variety of methods. To make them enticing, we tilted our selections in favour of those that students find interesting. So, readers will encounter explorations of the effects of day-dreaming or mind wandering in class on university students' understanding of lectures and their performance on exams, the effects of fear on sexual attraction, bullying in Canadian schoolyards, the brain and mental time travel, the relationship between depression and heart disease, studies of infant babbling, and studies of suicide rates among Canada's Indigenous youth.

A Didactic Illustration Program

When we outlined our plans for the fifth Canadian edition of the text, we wanted every aspect of the illustration program to have a genuine didactic purpose. We were intimately involved in planning every detail of the illustration program. We have endeavoured to create a program of figures, diagrams, photos, and tables that work hand in hand with the prose to strengthen and clarify the main points in the text.

The most obvious results of this didactic approach to illustration are the eight Illustrated Overviews that combine tabular information, photos, diagrams, and sketches to provide well-organized and exciting overviews of key ideas in the areas of methods, sensation and perception, learning, personality theory, psychopathology, and psychotherapy.

We hope you will also notice the subtleties of the illustration program. For instance, diagrams of important concepts (conditioning, synaptic transmission, experimental design, and so forth) are often repeated in the end-of-chapter Concept Charts and in several other chapters (with variations) to highlight connections among research areas and to enhance students' mastery of key ideas.

Numerous easy-to-understand graphs of research results underscore psychology's foundation in research, and photos and diagrams often bolster each other (e.g., see the treatment of classical conditioning in Chapter 6). Colour is used carefully as an additional organizational device, and visual schematics are used to simplify hard-to-visualize concepts (e.g., see Figure 9.15 on page 334, which explains reaction range for intelligence). All of these efforts were made in the service of one master: the desire to make this an inviting book that is easy to learn from.

Integrated Running Glossary

An introductory text should place great emphasis on acquainting students with psychology's technical language—not for the sake of jargon, but because a great many of the key terms are also cornerstone concepts (e.g., *independent variable*, *reliability*, and *cognitive dissonance*). This text handles terminology with a running glossary embedded in the prose itself. The terms are set off in **blue boldface italics**, and the definitions follow in **blue, boldface** type. This approach retains the two advantages of a conventional running glossary: vocabulary items are made salient and their definitions are readily accessible. However, the approach does so without interrupting the flow of discourse, while eliminating redundancy between text matter and marginal entries.

Concept Checks

To help students assess their mastery of important ideas, Concept Checks are sprinkled throughout the book. In keeping with the goal of making this a book of ideas, the Concept Checks challenge students to apply ideas instead of testing rote memory. For example, in Chapter 6 the reader is asked to analyze realistic examples of conditioning and identify conditioned stimuli and responses, reinforcers, and schedules of reinforcement.

Many of the Concept Checks require the reader to put together ideas introduced in different sections of the chapter. For instance, in Chapter 4, students are asked to identify parallels between vision and hearing. Some of the Concept Checks are quite challenging, but students find them engaging and they report that the answers (available in Appendix A) are often illuminating.

Key Learning Goals

To help students organize, assimilate, and remember important ideas, each major section of every chapter begins with a succinct set of Key Learning Goals. The Key Learning Goals are found adjacent to the main headings that begin each major section. The Key Learning Goals are thought-provoking learning objectives that should help students focus on the key issues in each section.

Concept Charts for Study and Review

This fifth Canadian edition for the text has incorporated summaries—Concept Charts—directly into the end of each chapter. In previous editions, these Concept Charts had been separate booklets for student study. Designed to help students organize and master the main ideas contained in each chapter, Concept Charts provide a detailed visual map of the key ideas found in the main body of that chapter.

Seeing how it all fits together should help students better understand each chapter. You can use these charts to preview chapters, to get a handle on how key ideas fit together, to double-check your mastery of the chapters, and to memorize the crucial principles in chapters. We have tested these out with our own students and they tell us that they are a very valuable tool in preparing for course exams.

Content

The text is divided into 16 chapters. The chapters are not grouped into sections or parts, primarily because such groupings can limit your options if you want to reorganize the order of topics. The chapters are written in a way that facilitates organizational flexibility, as we assume that some chapters might be omitted or presented in a different order.

The topical coverage in the text is relatively conventional, but there are some subtle departures from the norm. For instance, Chapter 1 presents a relatively “meaty” discussion of the evolution of ideas in psychology. This coverage of history lays the foundation for many of the crucial ideas emphasized in subsequent chapters. The historical perspective is also our way of reaching out to the students who find that psychology just isn't what they expected it to be. If we want students to contemplate the mysteries of behaviour, we must begin by clearing up the biggest mysteries of them all: “Where did these rats, statistics, synapses, and JNDs come from, what could they possibly have in common, and why doesn't this course bear any resemblance to what I anticipated?” We use history as a vehicle to explain how psychology evolved into its modern form and why misconceptions about its nature are so common.

We also devote an entire chapter (Chapter 2) to the scientific enterprise—not just the mechanics of research methods but the logic behind them. We believe that an appreciation of the nature of empirical evidence can contribute greatly to improving students' critical thinking skills. Ten years from now, many of the “facts” reported in this book will have changed, but an understanding of the methods of science will remain invaluable. An introductory psychology course, by itself, isn't going to make a student think like a scientist, but we can't think of a better place to start the process. Essential statistical concepts are introduced in Chapter 2, but no effort is made to teach actual calculations.

Changes in the Fifth Canadian Edition

The text length has been significantly reduced. We have managed to do this while at the same time adding new material and topics and updating our

existing text with new examples, findings, and explanations. As we have noted, students now have Concept Charts for review at the end of each chapter.

The following is a partial list of specific chapter changes that highlights some of the new key and updated topics and examples that have been included in the fifth Canadian edition.

CHAPTER 1: THE EVOLUTION OF PSYCHOLOGY

- Revised introduction.
- Revised section on the history of psychology.
- Revised discussion of the value of text highlighting in the coverage of study skills.
- Updated statistics on CPA membership and increasing enrollment in psychology courses.
- New Featured Study by McGill researchers on how children's psychopathologies influence how they respond to their peers.
- Updated statistics on Canada's diversity.
- New section and figures with statistics on where graduates of Canadian university graduate studies (MA, PHD) find jobs, and what types of jobs they find.

CHAPTER 2: THE RESEARCH ENTERPRISE IN PSYCHOLOGY

- New research study used to illustrate the five steps in a scientific investigation.
- New research study used to illustrate experimental research.
- Revised discussion and new research illustration of placebo effects.
- New research, statistics, and figure on the criminal victimization of Indigenous peoples in Canada used to illustrate survey research methods.
- New example of naturalistic observation focuses on how larger plate sizes lead to increased eating at real-world buffets.
- Another new example of naturalistic observation profiles a study of how depression affects everyday social behaviour.
- New example of case-study research evaluating anxiety and depressive disorders as risk factors for dementia.
- New discussion of how clinicians sometimes publish individual case histories to share insights regarding effective treatment.
- Added discussion of how manipulating two or more variables in an experiment can permit the detection of interactions between variables.
- Revised and updated discussion of ethics, including new material related to the complicity of psychologists and the American Psychological Association in developing

interrogation techniques for the U.S. military to use at Guantanamo Bay, and a photo and brief discussion of Omar Khadr as a child imprisoned there.

- Updated discussion on animal research ethics.
- Updated discussion and illustration in Personal Application of how to use PSYCHINFO in research.
- Revised Concept Chart included.

CHAPTER 3: THE BIOLOGICAL BASES OF BEHAVIOUR

- New introduction.
- Updated discussion of Western University's Adrian Owen and his work on those suffering from locked-in syndrome, and detecting signs of awareness in patients who have suffered traumatic brain injury.
- Revised discussion of glial cells.
- Updated and significantly revised discussion of how neurons function.
- Revised discussion of neurotransmitters.
- Revised discussion of oxytocin.
- New section that discusses new tool in genetic research—CRISPR, which enables scientists to edit genes.
- Updated and discussion of epigenetics.
- Revised Concept Chart included.

CHAPTER 4: SENSATION AND PERCEPTION

- Revised discussion of synesthesia—theory, research, and examples.
- Revised discussion of information processing in the visual cortex.
- Revised discussion of cultural effects in depth/distance processing.
- New coverage of auditory localization.
- New figure illustrating what and where visual pathways included.
- New Canadian chronic pain statistics included.
- Updated discussion on pain perception.
- New statistics on migraine sufferers in Canada.
- New Featured Study focused on social support and pain perception in seniors.
- Updated discussion on endorphins.

CHAPTER 5: VARIATIONS IN CONSCIOUSNESS

- Updated discussion of the sleep crisis in North America.
- New statistics on sleep problems in Canada.
- Revised discussion on mind wandering, including the neuroscience of mind wandering.
- Two new Featured Studies by Canadian researchers dealing with mind wandering by university students and links to grades and course performance.

- Updated discussion on circadian rhythms.
- Revised discussion on sleep deprivation, and the connections between sleep disturbance and Alzheimer's disease.
- Revised and updated discussion on sleep problems and health and sleep problems and decision making.
- Updated discussion of sleep disturbance and childhood deficits.
- Revised discussion of sleep disorders.
- Updated discussion on hypnosis, and individual differences in responses to hypnotic induction.
- New Canadian statistics on alcohol and drug abuse, and on impaired driving offences in Canada.
- Reference made to legalization of marijuana in Canada.
- New statistics added concerning drug use by Canadian students.
- New discussion of increase in opioid use and overdose deaths from fentanyl and carfentanyl.

CHAPTER 6: LEARNING

- Updated discussion of learning theory and superstitions, including new cultural examples.
- New coverage of studies of evaluative conditioning.
- New discussion of theoretical issues related to evaluative conditioning.
- New discussion of how the renewal effect in classical conditioning makes it difficult to extinguish troublesome phobias.
- New coverage of the renewal effect in operant conditioning and the context-dependent nature of operant extinction.
- Updated research on Little Albert.
- Updated material on the Canadian Department of Justice's guidelines for and restrictions on the use of physical punishment on children.
- Updated discussion on the negative effects of physical punishment on children.
- New Featured Study on social learning across psychological distance.
- New figure and discussion regarding the effects of media violence on children's aggression.
- Updated discussion on the effects of playing violent video games.
- Second new Featured Study on learning that deals with electrophysiological correlates of observational learning in children.
- New illustrations of the use of classical conditioning in advertising.

CHAPTER 7: HUMAN MEMORY

- Updated discussion of divided attention, cell phone use and its effects, and laws in Canada regarding distracted driving penalties.
- Updated and expanded discussion of working memory and hereditary and situational influences.
- Updated discussion and illustrations of flashbulb memories.
- Updated discussion on hypnosis and memory.
- New discussion of the reconsolidation effect in memory.
- Updated discussion and research on the declarative/nondeclarative memory distinction.
- New discussion of autobiographical memory.
- Updated discussion on prospective memory.
- Updated discussion on test-enhanced memory.
- New research showing that the misinformation effect can distort basic factual knowledge as well as personal memories.
- New findings on test-enhanced learning.
- Expanded discussion of the eyewitness post-identification feedback effect.
- New data on how often faulty eyewitness testimony contributes to wrongful convictions.

CHAPTER 8: LANGUAGE AND THOUGHT

- Updated statistics on bilingualism in Canada.
- New discussion on the effects of bilingualism on social skills development in infants.
- New discussion of "crib bilingualism."
- Updated research on interactionist theories of language.
- New theory and research concerning critical periods.
- Updated research on functional fixedness and mental sets.
- Revised discussion on culture and problem solving.
- New discussion on rationality and decision making.
- New discussion and research added on choice and decision making.
- New Critical Thinking Application on pitfalls in reasoning about decisions.
- New coverage of framing effects.

CHAPTER 9: INTELLIGENCE AND PSYCHOLOGICAL TESTING

- Revised chapter introduction.
- Reorganized, resequenced discussion of structural characteristics of intelligence.

- New section on broadening the concept of intelligence.
- New discussion of the development of and justification for distinct Canadian and American IQ test norms.
- Significant revision of the section discussing the history of IQ testing.
- New Featured Study examining the nature of IQ from the high-profile lab of Adrian Owen of Western University.
- Expanded discussion of hierarchical models of intelligence.
- Replaced previous discussion of IQ tests with new and elaborate discussion of WAIS (4th edition).
- Updated discussion and illustration of relation between IQ and mortality.
- Updated discussion of emotional intelligence.
- Updated discussion of research on the heritability estimates of IQ.

CHAPTER 10: MOTIVATION AND EMOTION

- New discussion of affiliation motivation and evolutionary analyses of motivation.
- Revised discussion of hormones and hunger.
- Updated research on contextual factors affecting eating/obesity.
- New discussion on stress and eating.
- New statistics on obesity in Canada.
- New material on obesity and health problems.
- Extensive revision and updating of section on excessive eating and exercise.
- New Canadian statistics on lack of exercise, with a focus on Canadian children.
- New research and discussion on set-point theory.
- New material on gender differences in sexual response.
- New statistics on hate crimes based on sexual orientation in Canada.
- New statistics on marriage in Canada.
- New statistics on self-reported sexual orientation in Canada.
- New Featured Study on affiliation motivation, ostracism, and factors associated with an ostracism experience that can reduce the negative effects of that experience.
- New second Featured Study on detecting lies told by children.
- New research on the connection between the amygdala and fear.
- New discussion of the classic Dutton and Aron study examining the two-factor theory of emotions.

- Updated research on the connection between money and happiness.
- Updated research on marriage and happiness.

CHAPTER 11: HUMAN DEVELOPMENT ACROSS THE LIFE SPAN

- Revised chapter introduction.
- Updated statistics regarding fetal alcohol syndrome in Canada.
- Updated research on fetal development and maternal nutrition.
- Updated research on fetal development and maternal stress.
- Revised discussion of fetal origins of adult disease.
- Updated statistics on breastfeeding in Canada.
- Revised discussion on day-care and attachment.
- Updated statistics on day-care use in Canada.
- Revised discussion of evaluating Piaget's contribution.
- Revised discussion of physiological changes in adolescence with updated research.
- Revised and updated discussion of the teen brain.
- Updated discussion, new research, and new figure regarding stability of personality in adulthood.
- Updated discussion of adjusting to marriage, and new statistics regarding marriage and divorce in Canada.
- New statistics on marriage and household responsibilities over time.
- Updated statistics on life expectancy in Canada.
- Discussion on the new Canadian doctor-assisted suicide law and its implications for end-of-life planning for the elderly.
- New statistics and figure on aging and health.
- Updated discussion and new statistics on aging and neural changes.
- New statistics and figure concerning aging and mental speed.
- New section on death and dying.
- New discussion on attitudes about death and dying.
- New coverage of the work of Kübler-Ross on reactions to bereavement.
- New discussion of cultural variations in dealing with bereavement.
- New coverage of various patterns of grieving.
- Revised and updated discussion on gender differences.
- New coverage of disparities in Vygotsky's and Piaget's theories of cognitive development.
- New discussion of the importance of private speech in Vygotsky's theory.

CHAPTER 12: PERSONALITY: THEORY, RESEARCH, AND ASSESSMENT

- Revised chapter introduction.
- Revised and updated (with new research) discussion of the five-factor model of personality.
- New discussion on the Dark Triad, the Dark Tetrad, and personality and evil.
- Revised discussion of Jung's analytical psychology.
- Revised discussion of Adler's theory.
- Revised and updated discussion of behavioural genetics and personality with new research.
- Revised and updated discussion of the evolutionary approach to personality.
- Revised and updated discussion of projective tests.

CHAPTER 13: SOCIAL BEHAVIOUR

- New Featured Study.
- Updated statistics on prejudice and hate crimes in Canada.
- New discussion on the experiences of Indigenous Canadians, including the residential school system and criminal victimization rates.
- Expanded discussion on the attractiveness stereotype and its relations to job success.
- New discussion of how Weiner's model of attribution can shed light on people's explanations for poverty.
- New discussion of defensive attribution.
- New research on attractiveness and the Big Five personality traits.
- New research on face perception.
- New research linking skin colour with perceptions of negativity.
- New research and findings on attachment anxiety and problems in intimate relationships.
- New findings on Facebook usage and loneliness.
- New discussion of how online matching sites have changed the landscape of dating and mating.
- New research showing a lower percentage of marital breakups in relationships formed online as opposed to offline.
- New discussion of why women's waist-to-hip ratio is an aspect of physical attractiveness that transcends culture.
- New research examining whether evolutionary hypotheses regarding gender differences in mating preferences hold up in speed-dating situations.
- New evolutionary research on how menstrual cycles influence women's mating preferences and strategies.

- New evolutionary research on how men use conspicuous consumption to signal wealth and success to potential mating partners.
- Updated discussion on attitudes and their attributes.
- New research linking implicit attitudes to real world behaviour.
- New section on the power of the situation and new critique of the Stanford Prison experiment.
- New research on Milgram's obedience paradigm.

CHAPTER 14: STRESS, COPING, AND HEALTH

- New discussion of and reference made to the community trauma and stress experienced and the potential for an increase in post-traumatic stress disorder as a result of the Fort McMurray wildfires.
- New statistics concerning the stress levels of Canadian college and university students.
- New discussion of stress-busting activities promoted by Canadian universities.
- New statistics on stress levels experienced by Canadians in their day-to-day living.
- Revised discussion on stress and change.
- New research on stress and heart disease.
- New discussion on the impact of stress on neurogenesis.
- New discussion on stress-induced shopping.
- New discussion on Internet addiction.
- New research and statistics on post-traumatic stress disorder and first-responders in Canada.
- New research and statistics on stress and hypertension in Canada.
- New findings on the association between social isolation and health.
- New research on the surprising benefits of weak social ties.
- New Featured Study.
- New discussion on social support and therapy animals.
- New statistics on post-traumatic stress disorder and how it relates to suicide in the Canadian military.
- New statistics on health problems in Canada.
- New statistics on alcohol and nicotine abuse.
- New findings on the effect of natural disasters on mental and physical health.
- New coverage of Internet addiction and well-being.
- New research on anger and heart attacks.
- New discussion of social class and health.
- New discussion of the relationship between social class and health.

- New research on how one's stress mindset affects one's response to stress.
- New evidence linking moderate levels of adversity to future resilience.

CHAPTER 15: PSYCHOLOGICAL DISORDERS

- Revised discussion of the DSM-5 and a new discussion of the distinction between categorical and dimensional systems of classification of disorders as reflected in the DSM-5.
- Expanded discussion of how the stigma of mental illness is a source of stress and an impediment to treatment.
- New discussion of the exponential growth of the DSM system and its tendency to medicalize everyday problems.
- New statistics on the incidence of psychological disorders in Canada and the cost to Canadian society.
- Updated discussion of Roméo Dallaire's continuing struggles with post-traumatic stress disorder.
- New Canadian statistics on suicide rates over time.
- New statistics on the incidence of suicide in the Canadian military.
- Updated discussion of some of the controversy surrounding the changes introduced in the DSM-5.
- New statistics on demographic differences in suicide in Canada.
- New Featured Study.
- Revised and updated discussion of psychopathy.
- Revised discussion concerning the history of the subtyping of schizophrenia.
- Revised discussion concerning the etiology of autism spectrum disorder.
- Updated discussion concerning the mental health needs of Canada's First Nations people

and how they are addressed in Canada's new mental health strategy with reference to traditional healing practices.

- Updated material concerning mindfulness-based cognitive-behavioural therapy.
- New mention of peer influence and history of child abuse as etiological factors in eating disorders.
- New research on the importance of early life stress in increasing the risk for a wide variety of adult-onset disorders many years later.
- New research on genetic and neurobiological overlap among depression, bipolar disorder, schizophrenia, and autism.

CHAPTER 16: TREATMENT OF PSYCHOLOGICAL DISORDERS

- Updated discussion on Psy.D. programs in Canada.
- New Featured Study.
- New findings on the importance of empathy and unconditional positive regard to therapeutic climate.
- New graphic on improvement in therapy over time.
- New coverage of common factors as an explanation for the effects of therapy.
- New discussion of empirical effort to partition the variance in therapeutic outcomes to quantify the influence of common factors.
- New data on prescription trends for antianxiety, antipsychotic, antidepressant, and mood-stabilizing drugs.
- New findings on ECT, including relapse rates, availability, and use.
- New research on ethnic matching between therapist and client.
- Discussion on how therapy can be delivered via the Internet.

Instructor Resources



The **Nelson Education Teaching Advantage (NETA)** program delivers research-based instructor resources that promote student engagement and higher-order thinking to enable the success of Canadian students and educators. Visit Nelson Education's **Inspired Instruction** website at www.nelson.com/inspired/ to find out more about NETA.

The following instructor resources have been created for *Psychology: Themes and Variations*, Fifth Canadian Edition. Access these ultimate tools for customizing lectures and presentations at www.nelson.com/instructor.

NETA Test Bank, Volumes 1 and 2

This resource was written by Kimberly Robinson, Saint Mary's University. Careful attention has been paid to ensuring questions reflect the material in this fifth Canadian edition, while matching the outstanding U.S. original in scope, effectiveness, and accuracy. The questions are closely tied to learning goals, and to the key terms and key people found in the text. The items follow Bloom's Taxonomy and are categorized as remember and higher order. In Volume 1, each chapter includes more than 200 multiple-choice questions written according to NETA guidelines for effective construction and development of higher-order questions. Also included are an average of five essay questions, accompanied by suggested answers. In Volume 2, each chapter includes more than 100 questions per chapter, offering more varied test materials and ensuring that students are challenged by fresh items.

The NETA Test Banks are available in a new, cloud-based platform. **Nelson Testing Powered by Cognero**® is a secure online testing system that allows instructors to author, edit, and manage test bank content from anywhere Internet access is available. No special installations or downloads are needed, and the desktop-inspired interface, with its drop-down menus and familiar, intuitive tools, allows instructors to create and manage tests with ease. Multiple test versions can be created in an instant, and content can be imported or exported into other systems. Tests can be delivered from a learning management system, the classroom, or wherever an instructor chooses. Nelson Testing Powered by Cognero for *Psychology: Themes and Variations*, Fifth Canadian Edition, can be accessed through www.nelson.com/instructor.



Case-Based Test Bank, Volume 3

A third, case-based question bank is available for use with *Psychology: Themes and Variations*, Fifth Canadian Edition. Developed by Bruce H. Tsuji, Chelsie Smith, Vasileia Karasaava, and Vichheka Oeur of Carleton University, these case-based multiple-choice questions can be offered in open-book test format for online and face-to-face courses. There are over 550 questions based on 86 cases, with an average of five cases and 35 questions per chapter.

NETA PowerPoint

Microsoft® PowerPoint® lecture slides for every chapter have been created by Dax Urbszat, University of Toronto. There is an average of 30 slides per chapter, many featuring key figures, tables, and photographs from *Psychology: Themes and Variations*. Notes are provided for many slides, allowing for additional information or sidebars to engage students in discussion. NETA principles of clear design and engaging content have been incorporated throughout, making it simple for instructors to customize the deck for their courses.

Image Library

This resource consists of digital copies of figures, short tables, and photographs used in the book. Instructors may use these jpegs to customize the NETA PowerPoint or create their own PowerPoint presentations. An Image Library Key describes the images and lists the codes under which the jpegs are saved. Codes normally reflect the chapter number (e.g., C01 for Chapter 1), the figure or photo number (e.g., F15 for Figure 15), and the page in the textbook. C01-F15-pg26 corresponds to Figure 1-15 on page 26.

NETA Instructor Guide

This resource has been specifically designed for you to use with *Psychology: Themes and Variations*. It presents chapter-by-chapter suggestions for lecture and discussion topics, demonstrations and activities that can be done during class sessions, suggested readings for each chapter, and handout or transparency masters to supplement lectures or demonstrations/activities.

Media Guide

The Media Guide includes a list of video cases selected to accompany *Psychology: Themes and Variations*, correlated with the chapter(s) they are most suitable. Compiled by Carolyn Ensley, Wilfrid Laurier University, this guide includes episode titles, descriptions, running time, and URLs.

Resource Integration Guide

This document organizes all the ancillary resources for *Psychology: Themes and Variations* under each major heading within every chapter. It's an indispensable tool for planning and coordinating resources for lectures and assignments.

MindTap

Offering personalized paths of dynamic assignments and applications, **MindTap** is a digital learning

solution that turns cookie-cutter into cutting-edge, apathy into engagement, and memorizers into higher-level thinkers. MindTap enables students to analyze and apply chapter concepts within relevant assignments, and allows instructors to measure skills and promote better outcomes with ease. A fully online learning solution, MindTap combines all student learning tools—readings, multimedia, activities, and assessments—into a single Learning Path that guides the student through the curriculum. Instructors personalize the experience by customizing the presentation of these learning tools to their students, even seamlessly introducing their own content into the Learning Path.

ACKNOWLEDGMENTS

FOR THE FIFTH CANADIAN EDITION

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Doug McCann

The Evolution of Psychology

Themes in this Chapter



Empiricism



Theoretical Diversity



Sociohistorical Context



Multifactorial Causation



Cultural Heritage



Heredity & Environment



Subjectivity

From Speculation to Science:
How Psychology Developed 3

An Illustrated Overview of Psychology's History 16

Psychology Today: Vigorous and Diversified 19

Putting It in Perspective: Seven Key Themes 22

PERSONAL APPLICATION

Improving Academic Performance 26

CRITICAL THINKING APPLICATION

Developing Critical Thinking Skills: An Introduction 28

Concept Chart 30

As you begin your course in introductory psychology and start reading this textbook, you may be wondering, “What is psychology?” Your initial answer to this question is likely to bear little resemblance to the picture of psychology that will emerge as you work your way through this book. Many students initially associate psychology with the study of psychological disorders or abnormal psychology. While abnormal psychology is an important component, psychology is about much more than that.

It’s also about how people are able to perceive colour, how hunger is regulated by the brain, whether chimpanzees can use language to communicate, why it is so hard to diet and lose weight, why we procrastinate on getting our essays and studying done, what causes bullying and aggression and how you can protect yourself, and a multitude of other topics. We are confident that you will come away from your study of this text with a new appreciation for the subject matter of psychology and what it can do for you.

Psychology as a scientific discipline has something for everyone. It addresses basic issues such as how we see, how the brain forms and stores memories, and what is the nature of consciousness. In addition, psychologists do research on issues that affect our individual lives and society at large. For example, one topic that has been the subject of intensive research in Canada and elsewhere is the topic of violence and peer aggression in children and young adults. Motivated by high-profile bullying cases such as those of Reena Virk, Dawn-Marie Wesley, Jamie Hubley, Todd Loik, Amanda Todd, and the more recent cyberbullying case of Rehtaeh Parsons, Canadian researchers Debra Pepler and Wendy Craig got together with their colleagues and established *PREVNet*. *PREVNet* (<http://www.prevnet.ca>) is a network of researchers and organizations focused on ending bullying in Canada. This group is at the forefront of bullying research and prevention.

While psychology is practical, addressing both basic and applied issues, it is more than that—it is a way of thinking. Beyond its practical value, psychology is worth studying because it provides a powerful way of thinking. All of us make judgments every day about why people do the things they do. For example, we might think that chronic two-pack-a-day smokers are weak willed, irrational, or just not smart enough to understand that the odds are stacked against them. Or we might believe they are in the grip of an addiction that simply overpowers them. How do we decide which of these judgments—if any—is right?

Psychologists are committed to investigating questions about human behaviour in a scientific way. This means that they seek to formulate precise questions about behaviour and then test possible answers through systematic observation. This commitment to testing ideas means that psychology provides a means of building knowledge that is relatively accurate and dependable. It also provides a basis for assessing the assertions we hear every day about behaviour, from friends and family, as well as in the popular media. Although most people probably don’t think about it much, psychology is in the news all the time—in newspapers and magazines, on TV and radio, and on the Internet. Unfortunately, this coverage is often distorted or grossly oversimplified, so that misinformation is commonplace. Thus, many “truisms” about behaviour come to be widely believed, when they really are misconceptions or myths. A small sampling of some popular myths related to psychology is shown in Table 1.1. This list of common misconceptions comes from an excellent book entitled *50 Great Myths of Popular Psychology* (Lilienfeld et al., 2010). In the pages to come we’ll touch upon a host of misconceptions about psychology and provide more accurate, science-based information on these matters. For example, in Chapter 3 you will learn that the idea that people only use 10 percent of their brains is not correct. Research suggests that the best way to dispel

Table 1.1
Popular Myths Related to Psychology

MYTH	RELEVANT CHAPTER
Most people use only 10% of their brain power.	Chapter 3
Playing Mozart’s music to infants boosts their intelligence.	Chapter 3
Hypnosis is a unique “trance” state that differs in kind from wakefulness.	Chapter 5
Hypnosis is useful for retrieving memories of forgotten events.	Chapter 7
The polygraph (“lie detector”) test is an accurate means of detecting dishonesty.	Chapter 10
Opposites attract: We are most romantically attracted to people who differ from us.	Chapter 13
People with schizophrenia have multiple personalities.	Chapter 15
A large portion of criminals successfully use the insanity defence.	Chapter 14

Source: Based on Lilienfeld, S.O., Lynn, S. J., Ruscio J., & Beyerstein, B. L. (2010). *50 great myths of popular psychology: Shattering widespread misconceptions about human behavior*. Malden, MA: Wiley-Blackwell./© 2017 Cengage Learning.



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Photo by Christopher Morris/Corbis via Getty Images

Modern psychology ranges widely in its investigations, looking at divergent topics such as work, sleep, stress, trauma, and brain function. It covers situations in which you work as a member of a group, such as an Olympic gold medal-winning hockey team, and situations in which individual motivation is key, such as 16-year-old Penny Oleksiak's gold-medal-winning swim in the women's 100 metre freestyle event at the 2016 Olympics. As you progress through this book, you will see that the range and diversity of psychology's subject matter are enormous.

students' misconceptions is to confront these beliefs head-on and provide a direct refutation (Kowalski & Taylor, 2009). Hence, throughout this book you will find a feature called Reality Checks that will highlight common fallacies and counter them with more accurate, realistic information. The Reality Check features will be found adjacent to relevant material, supplementing the normal text by explicitly attacking naïve, fallacious beliefs. We also highlight the science of psychology through Featured Studies in each chapter. The Featured Studies are part of our online content; they will be identified throughout the book with a link so you can access a more detailed and critical analysis of a particularly relevant research study.

We begin by taking a journey into psychology's past—a pictorial overview of the highlights of psychology's history can be found on pages 16–17. We then turn to considering psychology as it is today, a sprawling, multifaceted science and profession (Brock, 2006). To help keep psychology's diversity in perspective, the chapter concludes with a discussion of seven unifying themes that will serve as connecting threads in the chapters to come. Finally, in the chapter's Personal Application, we'll review research that gives insights on how to be an effective student, and in the Critical Thinking Application, we'll discuss how critical thinking skills can be enhanced.

From Speculation to Science: How Psychology Developed

Psychology's story is one of people working toward a better understanding of themselves. As the discipline has evolved, its focus, methods, and explanatory models have changed. Let's look at how psychology has developed from philosophical speculations about the mind into a modern research-based science.

The term *psychology* comes from two Greek words, *psyche*, meaning the soul, and *logos*, referring to the study of a subject. These two Greek roots were first put together to define a topic of study in the 16th century, when *psyche* was used to refer to the soul, spirit, or mind, as distinguished from the body (Boring, 1966). Not until the early 18th century did the term *psychology* gain more than rare usage among

scholars. By that time it had acquired its literal meaning, “the study of the mind.”

Of course, people have always wondered about the mysteries of the mind. In that sense, psychology is as old as the human race. But it was only about 140 years ago that psychology emerged as a scientific discipline.

Scholars interested in the history of psychology often point to developments in philosophy and physiology as influencing the course of early psychology (Green & Groff, 2003; Pickren & Rutherford, 2010). Ancient Greek philosophers such as Socrates (469–399 B.C.E.), Plato (427–347 B.C.E.), and Aristotle (385–322 B.C.E.) considered and debated issues of relevance to psychology, including such subjects as the

Key Learning Goals

- ▶ Summarize Wundt's contributions to psychology, and describe the chief tenets of structuralism and functionalism.
- ▶ Articulate Freud's principal ideas and why they inspired controversy.
- ▶ Trace the development of behaviourism, and assess Watson's impact on the evolution of psychology.
- ▶ Summarize Skinner's key insights, and explain the emergence of humanism and its underlying philosophy.



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Wilhelm Wundt 1832–1920

“Physiology informs us about those life phenomena that we perceive by our external senses. In psychology, the person looks upon himself as from within and tries to explain the interrelations of those processes that this internal observation discloses.”

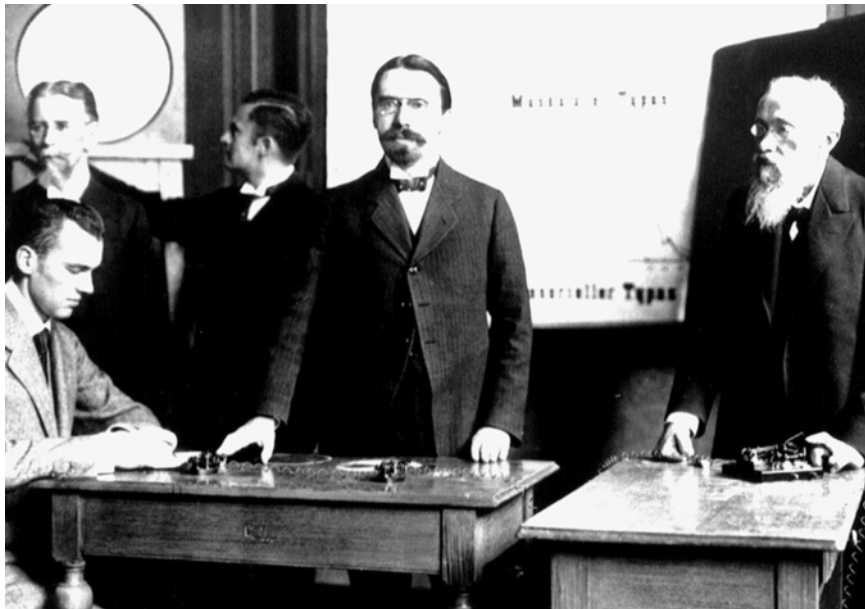
separation of mind and body and whether knowledge is inborn (nativism) or gained through experience (empiricism) (Hothersall, 1995).

As ideas in philosophy concerning the nature of mind and behaviour continued to develop, other disciplines, such as the study of experimental physiology and medicine, left their own marks on the later development of psychology. Physiologists and physicians such as Robert Whyte (1714–1766), Franz Gall (1758–1828), Paul Broca (1824–1880), and Johannes Müller (1801–1858) showed that important insights could be gained into the workings of the body and brain through the application of systematic, empirical methods. One of Müller’s students, Hermann von Helmholtz (1821–1894), began one of the first experimental examinations in psychology of human reaction time.

Although all of this work was important to the eventual form of psychology, many date the emergence of psychology as a distinct discipline to the work of Wilhelm Wundt (1832–1920).

A New Science Is Born

As just discussed, psychology’s intellectual parents were the disciplines of philosophy and physiology. By the 1870s, a small number of scholars in both fields were actively exploring questions about the mind. How are bodily sensations turned into a mental awareness of the outside world? Are people’s perceptions of the world accurate reflections of reality? How do mind and body interact? The philosophers and physiologists who were interested in the mind



The Drs. Nicholas and Dorothy Cummings Center for the History of Psychology, The University of Akron.

The establishment of the first research laboratory in psychology by Wilhelm Wundt (far right) marked the birth of psychology as a modern science.

viewed such questions as fascinating issues within their respective fields. It was a German professor, Wilhelm Wundt, who eventually changed this view. Wundt mounted a campaign to make psychology an independent discipline rather than a stepchild of philosophy or physiology. Wundt’s pioneering work had an enormous impact on the development of psychology (Wong, 2009).

In 1879 Wundt succeeded in establishing the first formal laboratory for research in psychology at the University of Leipzig. In recognition of this landmark event, historians have christened 1879 as psychology’s “date of birth.” Soon after, in 1881, Wundt established the first journal devoted to publishing research on psychology. All in all, Wundt’s campaign was so successful that today he is widely characterized as the founder of psychology (Benjamin, 2014).

Wundt’s conception of psychology dominated the field for two decades and was influential for several more. Borrowing from his training in physiology, Wundt (1874) declared that the new psychology should be a science modelled after fields such as physics and chemistry. What was the subject matter of the new science? According to Wundt, it was consciousness—the awareness of immediate experience. Thus, psychology became the scientific study of conscious experience. This orientation kept psychology focused squarely on the mind. But it demanded that the methods used to investigate the mind be as scientific as those of chemists or physicists.

Many outstanding scholars came to Leipzig to study under Wundt and then fanned out around the world, establishing laboratories that formed the basis for the new science of psychology. The growth of this new field was particularly rapid in North America, where some 23 new psychological research labs sprang up between 1883 and 1893 at the universities shown in Figure 1.1 (Benjamin, 2014). Although psychology was born in Germany, it blossomed into adolescence in North America.

The Battle of the “Schools” Begins: Structuralism versus Functionalism

Competing schools of thought exist in most scientific disciplines. Sometimes the disagreements among these schools are sharp. Such diversity in thought is natural and often stimulates enlightening debate. In psychology, the first two major schools of thought, structuralism and functionalism, were entangled in the first great intellectual battles in the field (Wertheimer, 2012).

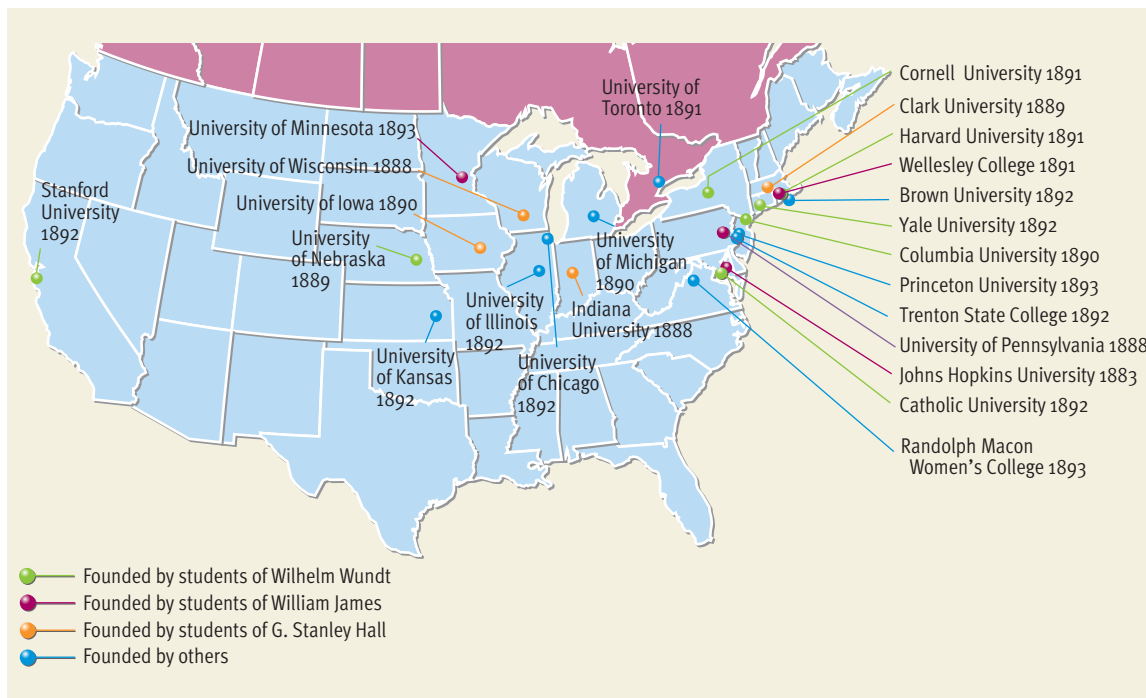


Figure 1.1
Early research laboratories in North America. This map highlights the location and year of founding of the first 24 psychological research labs established in North American colleges and universities. As the colour coding shows, a great many of these labs were founded by the students of Wilhelm Wundt, G. Stanley Hall, and William James.

Source: Based on Benjamin, 2000.

Structuralism emerged through the leadership of Edward Titchener, an Englishman who emigrated to the United States in 1892. After training in Wundt's lab, he taught for decades at Cornell University. **Structuralism was based on the notion that the task of psychology is to analyze consciousness into its basic elements and investigate how these elements are related.** Just as physicists were studying how matter is made up of basic particles, the structuralists wanted to identify the fundamental components of conscious experience, such as sensations, feelings, and images.

Although the structuralists explored many questions, most of their work concerned sensation and perception in vision, hearing, and touch. To examine the contents of consciousness, the structuralists depended on the method of introspection, or the careful, systematic self-observation of one's own conscious experience. As practised by the structuralists, **introspection required training to make the subject—the person being studied—more objective and more aware.** Once trained, participants were typically exposed to auditory tones and visual stimuli, and then they were asked to analyze and describe the quality, intensity, and clarity of what they experienced.

The functionalists were heavily influenced by William James (1842–1910), a brilliant American scholar, who took a different view of psychology's task. **Functionalism was based on the belief that psychology should investigate the function or purpose**

of consciousness, rather than its structure. James argued that the structuralists' approach missed the real nature of conscious experience. Consciousness, he argued, consists of a continuous flow of thoughts. In analyzing consciousness into its "elements," the structuralists were looking at static points in that flow. James wanted to understand the flow itself, which he called the *stream of consciousness*. Today, people take this metaphorical description of mental life for granted, but at the time it was a revolutionary insight. James went on to make many important contributions to psychology, including a theory of emotion that remains influential today (Laird & Lacasse, 2014; see Chapter 9). His landmark book, *Principles of Psychology* (1890), became standard reading for generations of psychologists. It is perhaps the most influential text in the history of psychology (Weiten & Wight, 1992).

Whereas structuralists naturally gravitated to the lab, the functionalists were more interested in how people adapt their behaviour to the demands of the real world around them. Instead of focusing on sensation and perception, the functionalists began to investigate mental testing, patterns of development in children, the effectiveness of educational practices, and behavioural differences between the sexes. These new topics may have played a role in attracting the first women into the field of psychology, some of whom played critical roles in the developing science of psychology. Margaret Floy Washburn was the first woman in the United

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William James
1842–1910

"It is just this free water of consciousness that psychologists resolutely overlook."

States to receive a Ph.D. in psychology. She was the author of the book *The Animal Mind* (1908), which served as a precursor to behaviourism, a theoretical approach discussed below. Another pioneering female psychologist, Leta Stetter Hollingworth, did important work on children's intelligence and was influential in debunking some of the theories current at the time that were proposed to explain why women were "inferior" to men. Mary Whiton Calkins, who studied with William James, went on to become the first woman to serve as president of the American Psychological Association (APA). Feminist psychologists, among others, have argued that women have traditionally been underrepresented in psychology and that psychology has often underemphasized the study of women and gender (Eagly et al., 2012). More recently, action has been taken in the discipline of psychology (Cynkar, 2007) to address both concerns. You can learn more about women in psychology by visiting the website for Psychology's Feminist Voices (<http://www.feministvoices.com/>), a project directed by psychologist Alexandra Rutherford.

The impassioned advocates of structuralism and functionalism saw themselves as fighting for high stakes: the definition and future direction of the new science of psychology. Their war of ideas continued energetically for many years. Who won? Most historians give the edge to functionalism. Both schools of thought gradually faded away. But the practical orientation of functionalism fostered the development of two important descendants—behaviourism and applied psychology (Green, 2009). We will discuss both momentarily.

Watson Alters Psychology's Course as Behaviourism Makes Its Debut

The debate between structuralism and functionalism was only the prelude to other fundamental controversies in psychology. In the early 1900s, another major school of thought appeared that dramatically altered the course of psychology (Todd & Morris, 1994). Founded by John B. Watson (1878–1958), **behaviourism is a theoretical orientation based on the premise that scientific psychology should study only observable behaviour.** It is important to understand what a radical change this definition represents. Watson (1913, 1919) was proposing that psychologists abandon the study of consciousness altogether and focus exclusively on behaviours that they could observe directly. In essence, he was redefining what scientific psychology should be about.

Why did Watson argue for such a fundamental shift in direction? Because to him, the power of the

scientific method rested on the idea of verifiability. In principle, scientific claims can always be verified (or disproved) by anyone who is able and willing to make the required observations. However, this power depends on studying things that can be observed objectively. Otherwise, the advantage of using the scientific approach—replacing vague speculation and personal opinion with reliable, exact knowledge—is lost. For Watson, mental processes were not a proper subject for scientific study because they are ultimately private events. After all, no one can see or touch another's thoughts. Consequently, if psychology were to be a science, it would have to give up consciousness as its subject matter and become instead the *science of behaviour*.

Behaviour refers to any overt (observable) response or activity by an organism. Watson asserted that psychologists could study anything that people do or say—shopping, playing chess, eating, complimenting a friend—but they could not study scientifically the thoughts, wishes, and feelings that might accompany these observable behaviours. Influenced by Ivan Pavlov's discovery of the conditioned reflex (discussed in Chapter 6), the behaviourists eventually came to view psychology's mission as an attempt to relate overt behaviours ("responses") to observable events in the environment ("stimuli").

Watson's radical reorientation of psychology did not end with his redefinition of its subject matter. He also staked out a rather extreme position on one of psychology's oldest and most fundamental questions: the issue of nature versus nurture. This age-old debate is concerned with whether behaviour is determined mainly by genetic inheritance ("nature") or by environment and experience ("nurture"). To oversimplify, the question is this: Is a great concert pianist or a master criminal born, or made? Watson argued that each is made, not born. In other words, he downplayed the importance of heredity, maintaining that behaviour is governed primarily by the environment. Indeed, he boldly claimed:

Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief, and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors. I am going beyond my facts and I admit it, but so have the advocates of the contrary and they have been doing it for many thousands of years. (Watson, 1924, p. 82)



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John B. Watson 1878–1958

"The time seems to have come when psychology must discard all references to consciousness."

For obvious reasons, Watson's tongue-in-cheek challenge was never put to a test. Although this widely cited quotation overstated and oversimplified Watson's views on the nature–nurture issue (Todd & Morris, 1992), his writings contributed to the strong environmental slant that became associated with behaviourism (Horowitz, 1992).

Although Watson's views shaped the evolution of psychology for many decades, he ended up watching the field's progress from the sidelines. Because of a heavily publicized divorce scandal in 1920, Watson was forced to resign from Johns Hopkins University (Buckley, 1994). Bitterly disappointed, he left academia at the age of 42, never to return. Psychology's loss proved to be the business world's gain, as Watson went on to become an innovative, successful advertising executive (Brewer, 1991; King, Woody, & Viney, 2013). The advertising industry was just emerging as a national force in the 1920s, and Watson quickly became one of its most prominent practitioners.

concept check 1.1

Understanding the Implications of Major Theories: Wundt, James, and Watson

Check your understanding of the implications of some of the major theories reviewed in this chapter by indicating who is likely to have made each of the statements quoted below. Choose from the following theorists: (a) Wilhelm Wundt, (b) William James, and (c) John B. Watson. You'll find the answers in Appendix A at the back of the book.

1. "Our conclusion is that we have no real evidence of the inheritance of traits. I would feel perfectly confident in the ultimately favourable outcome of careful upbringing of a healthy, well-formed baby born of a long line of crooks, murderers and thieves, and prostitutes."
2. "The book which I present to the public is an attempt to mark out a new domain of science. ... The new discipline rests upon anatomical and physiological foundations. ... The experimental treatment of psychological problems must be pronounced from every point of view to be in its first beginnings."
3. "Consciousness, then, does not appear to itself chopped up in bits. Such words as 'chain' or 'train' do not describe it fitly. ... It is nothing jointed; it flows. A 'river' or 'stream' is the metaphor by which it is most naturally described."

He pioneered fear appeals, testimonials, selling the "prestige" of products, and the promotion of style over substance, all of which remain basic principles in modern marketing (Buckley, 1982). Moreover, "through an enormous output of books, magazine articles, and radio broadcasts he was able to establish himself as the public spokesman for the profession of psychology and an expert on subjects ranging from childrearing to economics. In effect, Watson became the first 'pop' psychologist" (Buckley, 1982, p. 217). So, ironically, Watson became the public face of the discipline that had banished him from its mainstream.

Freud Brings the Unconscious into the Picture

Sigmund Freud (1856–1939) was an Austrian physician whose theories made him one of the most influential—and controversial—intellectual figures of the 20th century. Freud's (1900, 1933) approach to psychology grew out of his efforts to treat mental disorders. In his medical practice, Freud treated people troubled by psychological problems such as irrational fears, obsessions, and anxieties with an innovative procedure he called *psychoanalysis* (described in detail in Chapter 15). Decades of experience probing into his patients' lives provided much of the inspiration for Freud's theory.

His work with patients and his own self-exploration persuaded Freud of the existence of what he called the *unconscious*. According to Freud, **the unconscious contains thoughts, memories, and desires that are well below the surface of conscious awareness but that nonetheless exert great influence on behaviour.** Freud based his concept of the unconscious on a variety of observations. For instance, he noticed that seemingly meaningless slips of the tongue (such as "I decided to take a summer school course") often appeared to reveal a person's true feelings. He also noted that his patients' dreams often seemed to express important feelings they were unaware of. Knitting these and other observations together, Freud eventually concluded that psychological disturbances are largely caused by personal conflicts existing at an unconscious level. More generally, his *psychoanalytic theory attempts to explain personality, motivation, and mental disorders by focusing on unconscious determinants of behaviour.*

Freud's concept of the unconscious was not entirely new (Lothane, 2006). However, it was a major departure from the prevailing belief that

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Sigmund Freud
1856–1939

"The unconscious is the true psychical reality; in its innermost nature it is as much unknown to us as the reality of the external world."



Courtesy of the Clark University Archives

A portrait taken at the famous Clark University psychology conference, September 1909. Pictured are (seated, left to right) Sigmund Freud, G. Stanley Hall, and Carl Jung, and (standing) three of Freud's students and associates: Abraham Brill, Ernest Jones, and Sandor Ferenczi.

Skinner Questions Free Will as Behaviourism Flourishes

The advocates of behaviourism and psychoanalysis tangled frequently during the 1920s, 1930s, and 1940s. As psychoanalytic thought slowly gained a foothold within psychology, many psychologists softened their stance on the acceptability of studying internal mental events. However, this movement toward the consideration of internal states was dramatically reversed in the 1950s by a Harvard psychologist named B. F. Skinner (1904–1990).

Skinner did not deny the existence of internal mental events. However, he insisted that they could not be studied scientifically. Moreover, he maintained, there was no need to study them. According to Skinner, if the stimulus of food is followed by the response of eating, we can fully describe what is happening without making any guesses about whether the animal is experiencing hunger. Like Watson, Skinner also emphasized how environmental factors mould behaviour.

The fundamental principle of behaviour documented by Skinner is deceptively simple: Organisms tend to repeat responses that lead to positive outcomes, and they tend not to repeat responses that lead to neutral or negative outcomes. Despite its simplicity, this principle turns out to be quite powerful. Working with laboratory rats and pigeons in a small chamber called a Skinner box (see Chapter 6), Skinner showed that he could exert remarkable control over the behaviour of animals by manipulating the outcomes of their responses. He was even able to train animals to perform unnatural behaviours. For example, he once trained some pigeons to play a respectable version of table tennis. They pecked a ball back and forth on a ping-pong table.



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B. F. Skinner 1904–1990

"I submit that what we call the behaviour of the human organism is no more free than its digestion."

people are fully aware of the forces affecting their behaviour. In arguing that behaviour is governed by unconscious forces, Freud made the disconcerting suggestion that people are not masters of their own minds. Other aspects of Freud's theory also stirred up debate. For instance, he proposed that behaviour is greatly influenced by how people cope with their sexual urges. At a time when people were far less comfortable discussing sexual issues than they are today, even scientists were offended and scandalized by Freud's emphasis on sex. Small wonder, then, that Freud was soon engulfed in controversy.

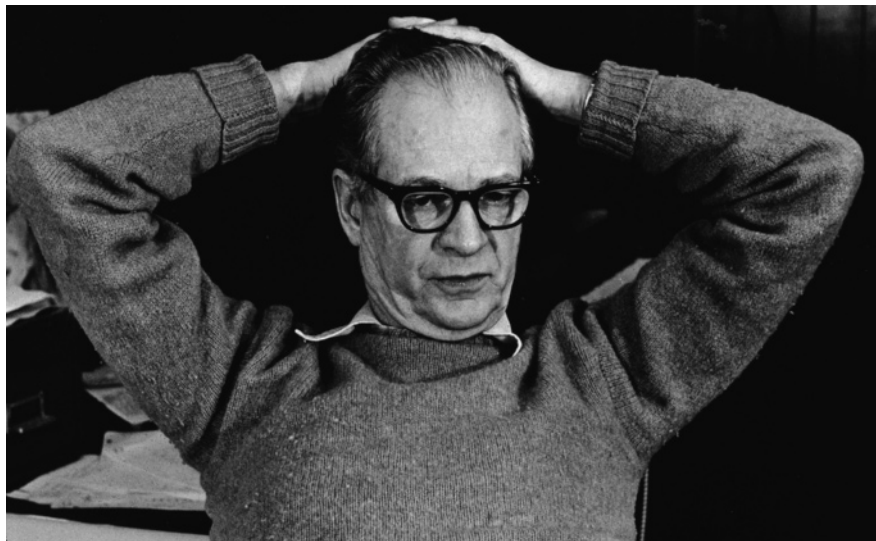


Photo by Sam Falk/New York Times Co./Getty Images.

B. F. Skinner created considerable controversy when he asserted that free will is an illusion.

reality check

Misconception

B. F. Skinner raised his daughter, Deborah, in a Skinner box, contributing to her becoming severely disturbed later in life, which led to her suicide.

Reality

Skinner did design an innovative crib called a “baby tender” for Deborah, which was featured in the *Ladies’ Home Journal* (Skinner, 1945; see the photo beside). But it was not analogous to a Skinner box, was not used for experiments, and apparently was quite comfortable. Deborah grew up normally, was very close to her father (Buzan, 2004). She has not suffered from psychological problems as an adult, and is alive and well, working as an artist.



Skinner’s followers eventually showed that the principles uncovered in their animal research could be applied to complex human behaviours as well. Behavioural principles are now widely used in factories, schools, prisons, mental hospitals, and a variety of other settings.

Skinner’s ideas had repercussions that went far beyond the debate among psychologists about what they should study. Skinner spelled out the full implications of his findings in his book *Beyond Freedom and Dignity* (1971). There he asserted that all behaviour is fully governed by external stimuli. In other words, your behaviour is determined in predictable ways by lawful principles, just as the flight of an arrow is governed by the laws of physics. Thus, if you believe that your actions are the result of conscious decisions, you’re wrong. According to Skinner, we are all controlled by our environment, not by ourselves. In short, Skinner arrived at the conclusion that free will is an illusion.

As you can readily imagine, such a disconcerting view of human nature was not universally acclaimed. Like Freud, Skinner was the target of harsh criticism. Much of this criticism stemmed from misinterpretations of his ideas reported in the popular press (Rutherford, 2000). For example, his analysis of free will was often misconstrued as an attack on the concept of a free society—which it was not. Somehow, a myth also emerged that Skinner raised his daughter in a version of a Skinner box and that this experience led her to be severely disturbed later in life. Despite the misinformation and controversy, however, behaviourism flourished as the dominant school of thought in psychology during the 1950s and 1960s (Gilgen, 1982).

The Humanists Revolt

By the 1950s, behaviourism and psychoanalytic theory had become the most influential schools of thought in psychology. However, many psychologists found these theoretical orientations unappealing. The principal charge hurled at both schools was that they were “dehumanizing.” Psychoanalytic theory was attacked for its belief that behaviour is dominated by primitive, sexual urges. Behaviourism was criticized for its preoccupation with the study of simple animal behaviour. Both theories were criticized because they suggested that people are not masters of their own destinies. Above all, many people argued, both schools of thought failed to recognize the unique qualities of *human* behaviour.

Beginning in the 1950s, the diverse opposition to behaviourism and psychoanalytic theory blended into a loose alliance that eventually became a new school of thought called “humanism” (Bühler & Allen, 1972). In psychology, **humanism is a theoretical orientation that emphasizes the unique qualities of humans, especially their freedom and their potential for personal growth.** Some of the key differences between the humanistic, psychoanalytic, and behavioural viewpoints are summarized in Figure 1.2, which compares six influential contemporary theoretical perspectives in psychology.

Humanists take an *optimistic* view of human nature. They maintain that people are not pawns of either their animal heritage or environmental circumstances. Furthermore, they say, because humans are fundamentally different from other animals,