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**Second Canadian Edition**

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**PSYCHOLOGY**  
Second Canadian Edition

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**PSYCHOLOGY**  
Second Canadian Edition

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Vassar College

**Anjanie McCarthy**

Fanshawe College

PEARSON

Toronto

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# BRIEF CONTENTS

01	INTRODUCTION 2	02	RESEARCH METHODS 14 Reading: <i>Becoming Friends by Chance</i> R1-1
03	THE HUMAN BRAIN 32 Reading: <i>Your Creative Brain: Seven Steps to Maximize Imagination, Productivity, and Innovation in Your Life</i> R2-1	04	SENSATION AND PERCEPTION 48
05	GENETICS AND EVOLUTION 66 Reading: <i>The Normative Implications of Biological Research</i> R3-1	06	HUMAN DEVELOPMENT I: PHYSICAL, COGNITIVE, AND LANGUAGE DEVELOPMENT 80 Reading: <i>Happy as a Lark: Morning-Type Younger and Older Adults Are Higher in Positive Affect</i> R4-1
07	HUMAN DEVELOPMENT II: SOCIAL DEVELOPMENT 94	08	SEX AND GENDER 108 Reading: <i>Sex and Gender Differences: New Perspectives and New Findings Within a Psychobiosocial Approach</i> R5-1
09	EMOTION AND MOTIVATION 120	10	CONSCIOUSNESS 134 Reading: <i>Effects of Acute Nicotine Administration on Resting EEG in Nonsmokers</i> R6-1
11	LEARNING 150	12	MEMORY 166
13	COGNITION 180 Reading: <i>Positive Mood Effects on Delay Discounting</i> R7-1	14	SOCIAL PSYCHOLOGY 198 Reading: <i>Decades Later, Still Asking: Would I Pull That Switch?</i> R8-1
15	PERSONALITY AND INDIVIDUAL DIFFERENCES 216 Reading: <i>Facebook Profiles Reflect Actual Personality, Not Self-Idealization</i> R9-1	16	PSYCHOPATHOLOGY 230
17	TREATMENT OF PSYCHOPATHOLOGY 248 Reading: <i>Motivation and Maltreatment History Among Youth Entering Substance Abuse Treatment</i> R10-1	18	HEALTH 264

# CONTENTS

About the Authors x

## 01



### INTRODUCTION 2

- What is Psychology? 4
  - Why Study Psychology? 4
- The History of Psychology 4
  - Prescientific Psychology 4 • Foundations of Scientific Psychology 5
- Levels of Analysis 7
- Nature vs. Nurture 8
  - History of the Nature-Nurture Debate 9
- Types of Psychology 9
  - Psychological Organizations 9 • Careers in Psychology 10

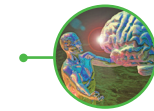
## 02



### RESEARCH METHODS 14

- Psychology and the Scientific Method 16
  - Folk Psychology 16 • Empiricism 16 • Why Do We Need Scientific Methods? 18 • The Importance of Critical Thinking 19 • The Story of Clever Hans 19
- Research Methods in Psychology 21
- Types of Research Strategies 21
  - Research Design: The Experiment 21 • Research Design: The Correlational Study 22 • Research Design: The Descriptive Study 23 • Research Settings 24 • Data Collection Methods 24
- Statistical Methods in Psychology 25
  - Descriptive Statistics 25 • Inferential Statistics 26
- Minimizing Bias in Psychological Research 27
  - Error 27 • Bias 27
- Ethical Issues in Psychological Research 29
  - Research with Humans 29 • Research with Animals 29
    - How Can We Ensure Ethical Research? 29
- **READING** *Becoming Friends by Chance R1-1*

## 03



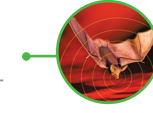
### THE HUMAN BRAIN 32

- The Brain in Context 34
  - Why Study the Brain? 34 • The Brain and the Nervous System 34
- Neurons: Their Anatomy and Function 34
  - Neuron Anatomy 34 • Communication Between Neurons 35
- The Central Nervous System: The Spinal Cord 38
  - The Job of the Spinal Cord 38 • Damage to the Spinal Cord 38

- The Central Nervous System: The Human Brain 38
  - The Brainstem and Subcortical Structures 39 • The Limbic System 40 • The Cerebral Cortex 41 • The Divided Brain 43

- **READING** *Your Creative Brain: Seven Steps to Maximize Imagination, Productivity, and Innovation in Your Life R2-1*

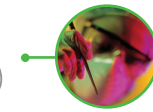
## 04



### SENSATION AND PERCEPTION 48

- Sensation 50
- Sensory Thresholds 50
  - Psychophysics 50
- Sensory Processes 51
  - Vision 52 • Visual Information Processing 52 Colour Vision 54
  - Hearing (Audition) 54 • Smell (Olfaction) 55 Taste (Gustation) 57
  - Body (Somesthetic) and Skin (Cutaneous) Senses 57
- Perception 58
- Attention and Perception 58
  - Unattended Stimuli and Pop-Out Stimuli 59
  - Preattentive Processing 59 • Multi-tasking 59
- Theories of Perception 59
  - Top-Down Processing 59 • Gestalt Principles 60
  - Object Recognition 61
- Perceptual Interpretation 62
  - Perceptual Adaptation 63 • Synaesthesia 63

## 05



### GENETICS AND EVOLUTION 66

- Natural Selection 68
- Genetic Mechanisms 68
  - Chromosomes, Genes, and DNA 68 • Sexual Reproduction 70
- Trait Inheritance: The Nature vs. Nurture Debate 71
  - Single-gene Traits 71 • Polygenic Traits 71
  - Sexual Selection 71 • Selective Breeding 71
  - Behaviour Genetics 72 • Molecular Genetics 72
- Evolution by Natural Selection 73
  - Evolutionary Psychology 73 • Acquired Characteristics: An Early Theory of Evolution 73 • Darwin and Selective Breeding 73 • Environmental Change 74 • Human Evolution: Bipedalism, Encephalization, and Language 74
- Species-Typical Behaviours 74
  - Human Behaviour 74
- Mating Patterns 76
  - Differential Parental Investment Theory 76 • Polygyny: One Male with Multiple Females 76 • Polyandry: One Female with Multiple Males 76 • Monogamy: One Male with One Female 76 • Polygynandry: Multiple Males with Multiple Females 77 • Human Mating Patterns 77
- Fallacies 77
- **READING** *The Normative Implications of Biological Research R3-1*



06



## HUMAN DEVELOPMENT I: PHYSICAL, COGNITIVE, AND LANGUAGE DEVELOPMENT 80

### What Is Developmental Psychology? 82

Research Methods 82

### Physical Development 82

Prenatal Development 82 • Infancy and Childhood 83  
Adolescence 84 • Early Adulthood 85 • Middle Adulthood 85  
Later Adulthood 85

### Cognitive Development 86

Infancy and Childhood 86 • Adolescence 89 • Adulthood 89

### Language Development 90

Universal Elements of Human Language 90 • Language  
Development Process 90 • Theories of Language  
Acquisition 91

- **READING** *Happy as a Lark: Morning-Type Younger and Older Adults Are Higher in Positive Affect R4-1*

07



## HUMAN DEVELOPMENT II: SOCIAL DEVELOPMENT 94

### Attachment 96

Origins of Attachment 96 • Differences in Attachment 96

### Relationships Throughout the Lifespan 97

The Role of Play 97 • Adolescence 99 • Emerging  
Adulthood 100 • Adulthood 100 • Growing Older 102

### Moral Development 104

Moral Action 105

08



## SEX AND GENDER 108

### Sex and Gender 110

#### The Nature of Gender 110

Primary Sex Characteristics 110 • Secondary Sex  
Characteristics 110 • Hormones 111

#### The Nurture of Gender 111

Gender Typing 111 • Androgyny 112 • Gender Identity  
Disorder 112 • Gender in Childhood 112 • Theories of  
Gender 113 • Gender Roles in Society 113 • Stereotypes and  
Sexism 113

#### Gender Similarities and Differences 114

Physical Differences and Psychological Vulnerabilities 114  
Aggression and Power 115 • Social Connectedness 116  
Sexual Eagerness 116

#### Sexual Orientation 116

The Role of Genetics 117 • Brain Structures and Sexual  
Orientation 117

- **READING** *Sex and Gender Differences: New Perspectives and New Findings Within a Psychobiosocial Approach R5-1*

09



## EMOTION AND MOTIVATION 120

### Theories of Emotion 122

The Nature of Emotions 122 • The Universality Hypothesis 122  
The James-Lange Theory 122 • The Cannon-Bard Theory 122  
Schachter and Singer's Two-Factor Theory 123 • Zajonc  
and the Mere Exposure Effect 123 • Cognitive-Appraisal  
Theory 123 • Plutchik's Model of Primary Emotions 123

### Emotion and the Body 123

Brain Structures 123 • Autonomic Nervous System 124  
Comparing Specific Emotions 125

### Non-verbal Emotional Expression 125

Facial Expression and Eye Contact 125 • Gender  
Differences 125 • Culture 125 • The Facial Feedback  
Hypothesis and Facial Expressions 126 • Deceptive  
Expression 126

### Experienced Emotion 126

Cognition and Emotion 126 • Valence and Arousal 127  
Fear 127 • Anger 127 • Happiness 127

### Perspectives on Motivation, Drives, and Incentives 128

Motivation 128 • Theories of Motivation 128 • Incentives 129  
Optimal Arousal 129 • Maslow's Hierarchy of Needs 130

### Hunger 130

The Physiology of Hunger 130

### Sexual Motivation 130

Synchrony 130 • Castration 130

### Belongingness 131

### Motivation at Work 131

Job Satisfaction 131

10



## CONSCIOUSNESS 134

### Consciousness and Information Processing 136

Levels of Consciousness 136 • Nonconscious,  
Preconscious, and Unconscious Information 136  
Survival Advantages of Consciousness 137

### Sleep 138

Circadian Rhythm 138 • Sleep Stages 138 • Stimuli  
Awareness and Learning 140 • Purpose of Sleep 141  
Sleep Needs and Patterns 141 • Sleep Deprivation 141  
Sleep Disorders 142

### Dreams 142

Dream Content 143 • The Purpose of Dreams 143

### Hypnosis 144

Susceptibility 144 • Recall 145 • Therapy 145 • Pain Relief 145

### Meditation 146

### Drugs 147

- **READING** *Effects of Acute Nicotine Administration on Resting EEG in Nonsmokers R6-1*

11



## LEARNING 150

### Principles of Learning 152

Behaviourism 152 • Some General Terms 152  
Biological Predispositions in Learning 153



## Classical Conditioning 154

Types of Classical Conditioning 154 • Classical Conditioning and Our Everyday Lives 155

## Operant Conditioning 156

Operant Behaviour 157 • Principles of Reinforcement 157  
Punishment and Shaping 159 • Applications of Operant Conditioning 159

## Observational Learning 160

Elements of Observational Learning 160 • Bandura's Experiments 160 • Applications of Observational Learning 160 • Learning-based Activities 161

## Learning in the Brain 161

Early Studies 161 • How Can We Become Smarter? 162  
What Parts of the Brain Are Involved in Learning? 162



## MEMORY 166

### The Function of Memory 168

### How Is Memory Organized? 168

Types of Memory 168 • Information Processing: The Backbone of Human Memory 168

### Sensory Memory 169

Iconic and Echoic Memory 169

### Working Memory 169

Encoding into Working Memory 169 • Storage in Working Memory 171 • Retrieval from Working Memory 171  
Forgetting 172

### Long-Term Memory 172

Organization of Long-Term Memory 172 • Encoding into Long-Term Memory 173 • Storage in Long-Term Memory 174 • Retrieval from Long-Term Memory 175  
Retrieval Failure: Forgetting 176 • Emotion, Stress, and Memory 176 • Amnesia 177



## COGNITION 180

### Cognitive Psychology 182

Mental Processes 182

### Theories of Intelligence 183

Intelligence Testing 183 • General Intelligence 184  
Nature or Nurture? 184 • Different Types of Intelligence 184  
Neurological Measurements of Intelligence 186

### Problem Solving and Reasoning 186

Concepts 186 • Problem Solving 187 • Reasoning 187  
Errors in Reasoning 188

### Decision Making, Judgment, and Executive Control 190

Decision Making 190

### Attention 191

Focus of Attention 191 • Unattended Stimuli 192  
Feature Integration 192

### Language and Verbal Cognition 193

Multiple Languages 193 • Language Production 193  
Language Comprehension 194 • Language and Thought 194

### Visual Cognition 195

• **READING** *Positive Mood Effects on Delay Discounting R7-1*



## SOCIAL PSYCHOLOGY 198

### Foundations of Social Psychology 200

Attribution Theory 200 • Constructing Social Reality 201

### Social Cognition 202

Perceptions of Social Cues: Facial Recognition 202  
Social Categorization 202 • Mentalizing 203

### Social Influence 203

Hedonic, Approval, and Accuracy Motives 203  
Contagious Behaviour 204 • Conformity 204  
Obedience 206 • Compliance 207 • Attitudes and Actions 208 • Persuasion 208 • Group Influence 209

### Social Relations 209

Emotional Foundations of Social Nature 209 • Prejudice 209  
Aggression 211 • Conflict 212 • Altruism and Prosocial Behaviour 213

• **READING** *Decades Later, Still Asking: Would I Pull That Switch? R8-1*



## PERSONALITY AND INDIVIDUAL DIFFERENCES 216

### Introduction to Personality 218

Strategies for Studying Personality 218

### Personality Traits 218

Trait Theories 219 • Assessing Traits 220  
The Effects of Genetics on Personality 221  
Evaluating the Trait Perspective 221

### The Psychodynamic Perspective 221

Sigmund Freud 221 • Post-Freudian Psychodynamic Theorists 222 • Assessing the Unconscious 222  
Evaluating Psychodynamic Theory 223

### The Humanistic Approach 223

Rogers and Self-concept 223 • Maslow and Self-actualization 224 • Evaluating the Humanistic Approach 228

### The Social Cognitive Perspective 225

Rotter and Personal Control 225 • Bandura, Reciprocal Determinism, and Self-Efficacy 226 • The Power of Thinking Positively 226 • Cross-Cultural Differences in Personality 227  
Evaluating the Social Cognitive Perspective 227

• **READING** *Facebook Profiles Reflect Actual Personality, Not Self-Idealization R9-1*



## PSYCHOPATHOLOGY 230

### Psychological Disorders 232

Diagnosing Psychological Disorders 232 • Labelling Psychological Disorders 233 • Cultural Variations 234  
Historical Perspectives of Psychological Disorders 234

### Possible Causes of Psychological Disorders 235

Brain Damage 235 • Multiplicity of Causes 235  
Gender Differences 235

## Anxiety Disorders 236

- Generalized Anxiety Disorder 236 • Phobias 237
- Panic Disorder 237 • Obsessive-Compulsive Disorder 237
- Post-Traumatic Stress Disorder 238
- Explaining Anxiety Disorders 238

## Mood Disorders 239

- Depressive Disorders 239 • Bipolar Disorders 239
- Explaining Mood Disorders 239

## Schizophrenia 240

- Explaining Schizophrenia 241

## Personality Disorders 242

- Odd/Eccentric Personality Disorders 242 • Dramatic/Erratic Personality Disorders 243 • Anxious/Inhibited Personality Disorders 243

## Dissociative Disorders 244

## Somatoform Disorders 244

## Childhood Disorders 245

- Attention-Deficit Hyperactivity Disorder 245
- Autism 245 • Asperger Syndrome 245

17



## TREATMENT OF PSYCHOPATHOLOGY 248

---

### Clinical Psychology and the Mental Health System 250

- The History of Mental Health Practices 250
- The Structure of the Mental Health System 250
- Preventive Care and Mental Health 251

### Biological Treatments: Biomedical Therapies 252

- Antipsychotic Drugs 252 • Antidepressants 252
- Anti-Anxiety Medication 253 • Mood-Stabilizing Drugs 253
- Electroconvulsive Therapy 253 • Psychosurgery 254

### Psychodynamic and Humanistic Psychotherapy 254

- Psychodynamic Therapies 254 • Humanistic Therapies 255

### Cognitive and Behavioural Psychotherapy 256

- Cognitive Therapy 257 • Behavioural Therapy 258

### Evaluating Psychotherapies 260

- The Efficacy of Psychotherapy 260 • Factors of Effective Psychotherapy 260 • Psychotherapy vs. Pharmacology 261

- **READING** *Motivation and Maltreatment History Among Youth Entering Substance Abuse Treatment R10-1*

18



## HEALTH 264

---

### The Mind-Body Connection 266

### Stress and Its Impact on Health 266

- Stress and Stressors 266 • The Stress Response System 267
- Stressful Life Events 268 • Stress and the Heart 269
- Stress and the Immune System 270 • Stress and Somatoform Disorders 271 • Seeking Treatment 271

### Improving Health 271

- Coping with Stress 271 • Factors That Reduce Stress 274
- Stress Management 276

Glossary 280

References 300

Credits 318

Index 320

## ABOUT THE AUTHORS



**ABIGAIL A. BAIRD** is a Professor of Psychology at Vassar College. She earned her undergraduate degree from Vassar College and both a M.A. and Ph.D. from Harvard University. Following completion of her Ph.D., she was awarded a post-doctoral fellowship at the Center for Cognitive Neuroscience, at Dartmouth College. Her numerous articles and presentations have covered topics such as adolescent brain development, cognitive regulation of emotion, juvenile justice, and manifestations of racial bias in mind brain and behaviour.

Abigail's research has received awards from Harvard University, the Society for Research on Psychopathology, and in 2008 the Association for Psychological Science named Abigail a "Rising Star in Psychological Science." Her research has also led her to be elected to several scientific societies including the International Society for Behavioral Neuroscience and the Gruter Institute for Law and Behavioral Research. Abigail has been repeatedly recognized for her excellence in teaching. In 2000 she received Harvard's George Goethals Teaching Prize, and in 2004 was awarded the Class of 1962 Excellence in Teaching Fellowship by Dartmouth College. Her professional accomplishments also include serving as secretary of the Association for Psychological Science, Honorary Faculty Member for the Order of Omega National Honor Society, Invited Faculty to the New York State Judicial Institute, and Advisory Board member on the Campaign for Youth Justice.



**ANJANIE MCCARTHY** is a Professor of Psychology at Fanshawe College. She has an undergraduate degree from the University of Toronto, and both master's and doctorate degrees in psychology from Queen's University, Ontario. Anjanie completed a post-doctoral fellowship at the University of Toronto before accepting a position at Fanshawe College.

Anjanie's research interests include the development of non-verbal behaviours during interpersonal interactions. For example, Anjanie has published on the development of eye gaze displays in different social contexts and socio-cultural and cognitive factors that affect eye gaze and other non-verbal behaviours. Her current research focuses on non-verbal communication in the classroom and ways to enhance communication between teacher and student.

As an instructor, Anjanie enjoys developing courses based on her research interests, such as *The Truth about Lies*, *Unravelling Youth*, and *Foodonomics: Starving for the Truth*. Anjanie lives in London with her husband, three sons, pet dog, and cockatiel.

---

“for my children, Christopher and Phoebe,  
whose lives inspire me”

—A. B.

“I dedicate this book to my three beautiful sons,  
Garnett, Caelan, and Isaac. I treasure every loving,  
sweet, and funny moment I have with you.”

—A. M.

---





# INTRODUCTION

*<<< Unfortunately, the Holocaust that George Brady survived is far from the only historical example of genocide. Even today, the Sudanese region of Darfur is still engaged in a conflict that many governments have deemed to be genocidal in nature. Several other countries, such as Syria and Ethiopia, also have escalating violence that could progress to genocide. What can the study of psychology teach us about the causes and consequences of such violent behaviour? What can psychology reveal about the complexity of human behaviour?*

# What

is your life story? Who and what has shaped the person you are today? Whether your life is filled with great positive experiences or seemingly insurmountable obstacles, we all have a story to tell. Some of these stories are especially inspirational. The story of George Brady is one such story.

George Brady and his sister, Hana, worked in their family's general store and enjoyed skiing, skating, and spending time with their family—until Hitler changed their world forever. In 1941, their parents, Karel and Marketa Brady, were arrested by Hitler's army and taken to concentration camps. A year later George, aged 14, and Hana, aged 11, were sent to the ghetto of Terezin and separated. In 1944, George was sent to Auschwitz and a year later he escaped from the Nazi concentration camp. At the age of 17, George was the only member of his immediate family to survive the Holocaust.

George eventually immigrated to Canada where he still lives. He and a fellow Holocaust survivor established a successful plumbing business, and after 40 years George retired but remained active in charity work. He married and had three sons and one daughter. George stands as an example of the resilience and strength that resides within human beings. What was it about George that allowed him to overcome the emotional, mental, and physical damage of the Holocaust and create a normal life for himself?

And what gave George the strength to recount his painful and horrific past so many years later? In 2000, George received a letter from Fumiko Ishioka, executive director of the Tokyo Holocaust Education Resource Centre, explaining that she came across

**WHAT IS PSYCHOLOGY AND WHY DOES IT FASCINATE US?**

**WHAT IS THE HISTORY OF PSYCHOLOGY?**

**WHAT MAJOR QUESTIONS DO PSYCHOLOGISTS SEEK TO ANSWER?**

**WHAT ARE SOME DIFFERENT SUBTYPES OF PSYCHOLOGY?**

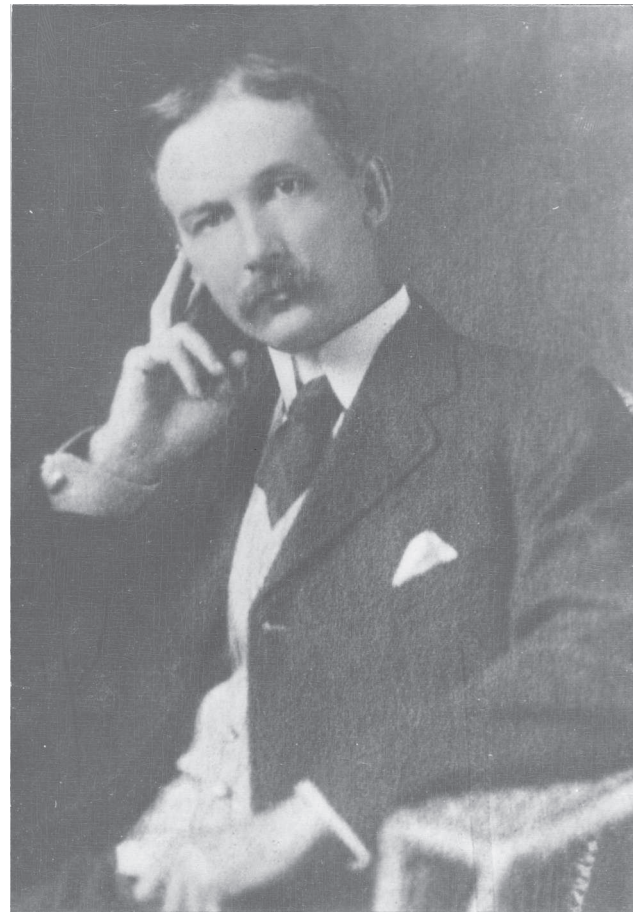
Hana's suitcase and artwork while researching the Holocaust. Fumiko had opened a successful educational exhibition entitled "The Holocaust Seen Through Children's Eyes," and Hana's artwork was among those of other children's that were displayed. While visiting George in Canada, Fumiko and George were interviewed by the Canadian Jewish News and the CBC. In 2002, Karen Levine, of the CBC, wrote "Hana's Suitcase," which was later translated into 40 languages, adapted for the stage, and led to a Gemini Award-winning documentary, and other award-winning docudramas based on Hana and George's stories. In 2009, George Brady received the Order of Ontario.

For George and other survivors, the Holocaust will always be a pivotal, critical influence in who they have become and an important element of their life's story. When we hear about stories such as George Brady's, questions abound: What gave George the mental strength not only to survive his experiences but also to become stronger as a result of them? Was it the character he was born with, or did something in his experience make him the great man he has become?

The study of psychology sheds light on our life stories. It examines the many influences on our lives, why we behave as we do, and the thoughts, beliefs, and emotions that make us who we are today. Psychology helps us understand the lives of others and gain insight into ourselves.



>>> **James Mark Baldwin** established the **first psychological laboratory** in North America at the **University of Toronto** in 1889. A supporter of William Wundt, Baldwin became a leader in experimental psychology.



## What Is Psychology?

**Psychology** is the scientific study of behaviour—overt actions and reactions—and mental processes—covert internal activity in the mind. While philosophers might speculate on why people act as they do, psychologists use scientific methods to accurately describe, explain, predict, or control human and animal behaviour. The scientific method has only fairly recently been applied to psychology; until approximately 130 years ago, psychology was considered to be a branch of philosophy. Throughout this chapter, we will examine the development of psychology as a formal discipline in its own right.

### WHY STUDY PSYCHOLOGY?

What motivated you to study psychology? Maybe you are hoping to solve the “nature versus nurture” debate and learn whether environmental factors can truly ever trump genetics. Perhaps you are looking for tips on how to improve your relationships with your

friends and family members, or maybe you’re more interested in learning about how you can reduce stress and anxiety in your daily life. If you polled your fellow students about their reasons for studying psychology, you would likely discover that everyone has something in common—a fundamental curiosity about themselves and the world they live in. Among other things, studying psychology reduces our uncertainty about our own experiences by providing knowledge about ourselves (Why do I remember some things and not others? How can I break my bad habits?),

other people (Why do people suffer from mental disorders? Why do people have different personalities?), and the world (Do people from other countries perceive the world differently? How does culture affect how we express ourselves?).

## The History of Psychology

### PRESCIENTIFIC PSYCHOLOGY

In the fifth century BC, Greek philosophers began to speculate about how the mind works and how it might affect behaviour. Socrates (470–399 BC) and Plato (428–347 BC) believed that the mind did not cease to exist when the body died, and that thoughts and ideas could exist separately from the body, a concept known as **dualism**. They theorized that knowledge is built within us and that we gain access to it through logical reasoning.

Although Socrates’s and Plato’s beliefs were developed nearly 2500 years ago, it was not until the Scientific Revolution of the late Renaissance period that French philosopher

René Descartes (1596–1650), a believer of Socrates’s idea that mind is distinct from body, began to investigate how the two might be connected. By dissecting the brains of animals, Descartes concluded that the pineal gland at the base of the brain was the principal seat of the soul, where all thoughts were formed. He believed that the soul flowed through the body through hollow tubes and controlled muscle movement. Although anyone who still subscribes to Descartes’s beliefs about the soul would probably fail a biology exam, the hollow tubes that Descartes noted were, among other things, important for controlling reflexes: We now know them as nerves.

Not all 17th century philosophers agreed with the theories of Socrates and Plato. British philosopher John Locke (1632–1704) believed that at birth, the human mind is a *tabula rasa*, a “blank slate,” containing no innate knowledge. Locke proposed that people gain knowledge through their experiences by means of observation, laying the foundations for later studies in sensation and perception. His theory that knowledge is gained through careful external and internal observation planted the early seeds of empiricism and contributed to the development of the scientific method.

**Psychology** is the scientific study of behaviour and mental processes.

**Dualism** is the belief that the mind does not cease to exist when the body dies, and that thoughts and ideas can exist separately from the body.

**Structuralism** is a school of psychology concerned with the individual elements of consciousness and showing how they can be combined and integrated.

**Functionalism** is a school of psychology focused on how organisms use their learning and perceptual abilities to function in their environment.

**Gestalt psychology** is a school of psychology centred on the belief that people naturally seek out patterns, or wholes, in the sensory information available to them.



## FOUNDATIONS OF SCIENTIFIC PSYCHOLOGY

Most psychologists agree that the birth of modern psychology occurred in a laboratory in Germany in 1879. The founder of the laboratory, William Wundt (1832–1920), argued that the mind could be examined both scientifically and objectively, and he invited students from around the world to learn how to study the structure of the human mind. This was the first time anyone had attempted to incorporate objectivity and measurement into the field of psychology, earning Wundt the moniker “father of psychology.” His lectures gained popularity throughout the 1880s, and before long, the new science of psychology had evolved into two early schools of thought: structuralism and functionalism.

### Structuralism and Functionalism

One of Wundt’s students, Edward Titchener (1867–1927), believed that experiences could be broken down into individual emotions and sensations, much as a chemist or a physician might analyze matter in terms of molecules and atoms. His school of thought, which focused on identifying individual elements of consciousness and showing how they could be combined and integrated, became known as **structuralism**. Titchener’s approach was to engage people in introspection, or “looking inward,” training them to report various elements of their experiences as they patted a dog, thought about the colour blue, or smelled a flower. Introspection and structuralism were short-lived concepts, dying out in the early 1900s. Although they had little long-term effect on psychological science, the study of sensation and perception is still an important part of contemporary psychology (see Chapter 4).

Unlike Wundt and Titchener, American academic William James (1842–1910) believed that to break consciousness into individual elements was an act of impossibility. He saw consciousness as a continuing stream of ever-changing thoughts that could not be separated. Instead, James focused on how organisms use their learning and perceptual abilities to function in their environment, an approach that came to be known as **functionalism**. Influenced by Darwin’s theories of evolution, James speculated that thinking developed because it is adaptive. He believed that useful behavioural

traits (in addition to physical traits) could be passed from generation to generation.

Although functionalism is no longer a major perspective in psychology, elements of functionalist thought can still be seen in educational psychology and organizational psychology. For example, by emphasizing individual differences, functionalism influenced the theory that children should be taught at the level for which they, as individuals, are developmentally prepared.

### Gestalt Psychology

In Germany, psychologists were also objecting to structuralism, albeit for different reasons. Max Wertheimer (1880–1943) believed that the acts of sensing and perceiving could not be broken into smaller elements and still be understood. When people look at a house, Wertheimer reasoned, they see a house, not a collection of doors, walls, and windows. Wertheimer and his colleagues believed that the act of perception entails more than just the sum of its parts. Their ideas developed into a school of thought known as **Gestalt psychology**. Roughly translated, *gestalt*

“Wundt’s lectures gained popularity throughout the 1880s, and before long, the new science of psychology had evolved into two early schools of thought: structuralism and functionalism.”

means “whole” or “form.” Gestalt psychologists believed that people naturally seek out patterns, or wholes, in the sensory information available to them. (See Chapter 4 for more information about Gestalt psychology.)

### Psychodynamic Theory

If one of the hallmarks of fame is to have one’s favourite terms and catchphrases become part of our everyday lexicon, then Sigmund Freud (1856–1939) has achieved the height of posthumous celebrity in the world of psychology. Have you ever described someone as anal, discussed the Oedipus complex, or accused someone of using humour as a **defence mechanism**? If so, you can thank Freud for these terms and the psychological theories behind them.

Freud was an Austrian medical doctor who specialized in disorders of the nervous system,

**Psychosexual Stages** are developmental stages during which the id’s desire for pleasure focuses on many of the body’s erogenous zones in turn.

**Fixation** is a focus on one particular erogenous zone of the body.

**Defence mechanism** is a mental process of self-deception that helps a person alleviate his or her worry or anxiety.

but his greatest contributions to psychology were his theory of **psychosexual development** and his conceptualization of the human psyche. According to Freud, human development progressed in stages, with each stage representing a significant developmental milestone. If an individual is unable to successfully accomplish the milestone, then they become “stuck” or fixated at that phase (see accompanying table). For example, in the anal stage of development, a child must develop the ability to control his or her bladder and bowels, thereby becoming “potty trained.” If, however, during this stage the child is unable to successfully achieve this goal

or if negative or traumatic events hinder his or her progression, then the child will carry these issues onward and not fully resolve the issues of this stage. This **fixation** at the anal stage of development has led to such terms as *anally retentive* to describe individuals who are overly controlling—perhaps to compensate for their lack of control during the anal stage of development.

Freud also believed that the human psyche was made up of three components: the id, ego, and superego. The id represents our unconsciousness. Freud believed that humans are motivated by primitive sexual drives, forbidden desires, and traumatic childhood memories that lay in our unconsciousness. According to Freud, these repressed urges constantly impinge upon the conscious mind, represented by the ego, and are expressed through dreams, slips of the tongue (now known as Freudian slips), or symptoms of psychological disorders. Finally, the third component of our psyche is the superego, which represents the moral or righteous aspect of humanity. According to Freud, there is conflict between the biological needs of the id (for sex, violence, food, etc.) and the superego, which dictates appropriate, civilized behaviours. The ego is caught in the middle, like a referee, and when the conflict becomes too great, the ego is in jeopardy of becoming damaged. Defence

# Freud's Theory of Psychosexual Development

Stage of Psychosexual Development	General Age Range	Developmental Milestone To Be Accomplished
Oral stage	Infancy	Weaning
Anal stage	2–4 years	Toilet training
Phallic stage	4–7 years	Sexual identity Stage when we see Oedipal and Electra complex
Latent stage	7 years to the onset of puberty	No major conflict or task
Genital stage	Puberty onwards	Sexual behaviour, intimacy

mechanisms, such as denial, regression, and repression, protect the ego, which is essential because a damaged ego leads to psychological, physical, and behavioural problems.

Freud's theories, which formulated the **psychodynamic approach** to psychology, were highly controversial. Many of his Victorian contemporaries were shocked, both by his focus on sexuality and by the implication that people are not always in control of their actions. However, Freud's theories were held in high regard, inspired many well-known researchers, and formed the basis of modern psychotherapy, the development of which is discussed in Chapter 15.

Swiss psychologist Carl Jung expanded on Freud's ideas by focusing on dream analysis and the role of symbolism. His work not only led to key psychological concepts, such as the collective unconscious (a part of our unconsciousness that is universally shared

Freud's theories were held in high regard, inspired many well-known researchers, and formed the basis of modern psychotherapy.

by all living things), but also had a significant and broad influence on our understanding of society. For example, his influence is seen in discussions about the psychology of religion, the use of art as a form of therapy, and the concept of individuation, which is a key concept in analytical psychology.

The work of Anna Freud, Freud's daughter, expanded his theory of psychosexual development and helped to advance the field of psychoanalytic child psychology. Her work was among the first to examine the roles of stress and poor attachment on children and to address ways to improve their outcomes. Anna Freud's work became the foundation for "ego psychology."

## Behaviourism

One disadvantage of psychoanalytic theory is that it is difficult to test it scientifically. For example, it is all but impossible to prove that a grown woman has relationship problems because she unconsciously resents her father for not being around when she was a child. The theories of structuralism and functionalism faced similar challenges because they both involved the study of consciousness—internal processes that could not be measured or validated. John B. Watson (1878–1958), however, wanted to make scientific inquiry a primary focus in psychology. In the 1900s, he developed the **behavioural approach** to psychology, which concentrates on observable behaviour that can be directly measured and recorded.

Watson's ideas were based on the work of Russian physiologist Ivan Pavlov, who showed that a reflex (an involuntary action) such as salivation could be trained (conditioned) to occur in response to a formerly unrelated stimulus, such as a ringing bell. Whereas Freud believed that behaviour stemmed from unconscious motivation, Watson used Pavlov's research to argue that behaviour can be learned. Watson and his colleague, Rosalie Rayner, famously proved that fear could be conditioned by teaching an 11-month-old child to fear a white rat. By repeatedly pairing the appearance of the rat with a loud, scary noise, the child eventually associated the rat with the noise and cried whenever he saw the creature (Watson & Rayner, 1920). Given the questionable ethics of this study, it is unlikely that Watson's experiment will ever be repeated, though similar results have been obtained using less damaging forms of conditioning. The ethical factors to consider when designing and carrying out an experiment are discussed in detail in Chapter 2.

Throughout the mid-20th century, behaviourism gained momentum through the work of B. F. Skinner, who supported Watson's idea of learning through conditioning. Skinner believed that behaviour could be altered through reinforcement—rewarding or punishing a learner when he or she engages in a particular behaviour. The ways in which Watson and Skinner influenced contemporary psychological approaches are discussed in Chapter 11.

## Humanistic Psychology

In the first half of the 20th century, psychoanalysis and behaviourism were the two primary approaches to psychology. However, neither of them put forth the suggestion that individuals have significant control over their own destinies. Behaviourists maintained that people's actions were learned responses to various stimuli, while psychoanalysts claimed that people were influenced by their unconscious desires.

In the 1950s, a new psychological perspective emerged. This perspective emphasized the importance of self-esteem, self-expression, and reaching one's potential. Supporters of the **humanistic approach**, as it came to be known, believed that people have free will and are able to control their own destinies. Two founding theorists of the humanistic approach were Abraham Maslow (1908–1970), who studied motivation and emotion, and Carl Rogers (1902–1987), who made significant contributions to the study of personality and the practice of psychotherapy. Maslow believed that people

**Psychodynamic approach** is an approach to psychology based on the belief that behaviours are motivated by internal factors unavailable to the conscious mind.

**Behavioural approach** is an approach to psychology that concentrates on observable behaviour that can be directly measured and recorded.

**Humanistic approach** is an approach to psychology based on the belief that people have free will and are able to control their own destinies.

**Cognitive psychology** is a field of psychology focused on the workings of the human brain and seeking to understand how people process the information that they collect from their environments.

**Evolutionary approach** is an approach to psychology that explores ways in which patterns of human behaviour may be beneficial to people's survival.

**Levels of analysis** are various ways that psychologists can look at a psychological issue, such as from the level of the brain, the level of the person, and the level of the world.

should strive for self-actualization—the achievement of one’s full potential.

Although the humanistic approach has had a pervasive effect in many disciplines, critics argue that it can come across as vague and naively optimistic. Chapter 15 provides an in-depth discussion of the facets of humanistic theory.

## Cognitive Psychology

By the 1960s, developments in linguistics, neurobiology, and computer science were providing new insight into the workings of the human mind. The development of computers, in particular, stimulated an interest in studying thought processes. Pioneers in the field of **cognitive psychology** focused on the workings of the human brain and sought to understand how we process the information that we collect from our environments.

Focusing on memory, perception, learning, intelligence, language, and problem solving, cognitive psychologists expanded the definition of psychology to incorporate the study of specific mental processes into the more general concept of behaviour. Developments in brain-imaging techniques have enabled cognitive psychologists to examine neurological processes that previously mystified scientists, such as how we store memories or how damage to particular areas of the brain increases the likelihood of specific mental disorders. In a relatively short period of time, the cognitive perspective has become one of the most rapidly advancing perspectives in modern psychology.

## Evolutionary Psychology

Why are people commonly afraid of snakes and spiders but not of cars or trains? It’s generally believed that through the evolutionary process, our ancestors developed a healthy fear of things that might harm them (Seligman, 1971). Whereas fearless warriors who took on rattlesnakes with their bare hands probably didn’t make it very far along the evolutionary ladder, those with more cautious approaches toward reptiles tended to survive, passing on their genes and eventually producing an entire population of people who naturally fear snakes. Since cars and trains have not been around for long enough to pass on a fear of crashes, we are not yet genetically predisposed to fear them.

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Statistically, you are more likely to be killed in a **jumbo jet crash** than as a result of a **snake bite**, but our **evolutionary instincts** have yet to catch up with our **natural phobias**.

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official for men to father as many children as possible.

Over the years, the field of psychology has grown as scientists discover new and valuable ways of examining thoughts, actions, and behaviours. Today, psychologists use all of the approaches mentioned here—and more—to study the workings of the human mind. Some psychological perspectives may seem to contradict each other, and there’s no consensus in the psychological community about which approach is the “right” approach. Rather, each of the many diverse approaches

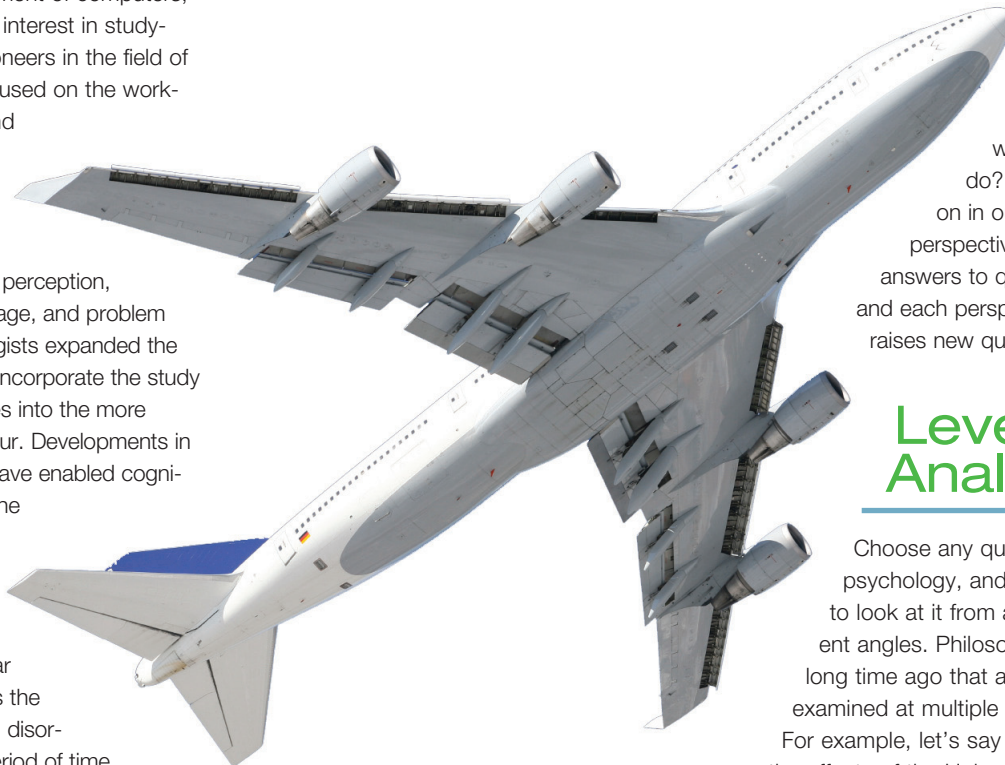
to psychology sheds new light on the fundamental questions of the field: Why do we act the way we do? What really goes on in our minds? Each perspective offers its own answers to questions like these, and each perspective, in turn, raises new questions of its own.

## Levels of Analysis

Choose any question or issue in psychology, and you will be able to look at it from a number of different angles. Philosophers observed a long time ago that a single issue can be examined at multiple levels of analysis.

For example, let’s say you are studying the effects of the Holocaust on survivors such as George Brady. You might examine the survivors at the level of the brain (How do the biological mechanisms in Holocaust survivors compare to the biological mechanisms of other people?), at the level of the person (How have this person’s beliefs and values changed as a result of his experiences?), or at the level of the world (How do Holocaust survivors interact with the people around them?). Psychologist Stephen Kosslyn identified these three categories as the major **levels of analysis**, although there are many more angles from which to approach a particular psychological issue.

Sometimes, psychological issues are ideally suited to a particular level of analysis. For example, if you are studying personality, it makes sense to focus your study at the level of the person. How do individuals react in stressful situations? What gives people a sense of achievement? How stable are individual



Based on Darwin’s theory of natural selection, the **evolutionary approach** to psychology explores ways in which patterns of human behaviour may be beneficial to our survival. Evolutionary psychologists study issues such as parenting, sexual attraction, and violence among different species and cultures to explain how people might be genetically preprogrammed to behave in a certain way. For example, a recent study indicates that men with a gene variant called “allele 334” may find it more difficult to remain monogamous than men without the allele (Walum et al., 2008). Researchers have long speculated that the stereotype of the male philanderer developed as a result of gender differences between the sexes, and evolutionary psychologists might argue that while women require consistent, stable relationships because they spend more time nurturing children, it is evolutionarily ben-



**Nature** describes inherited characteristics that influence personality, physical growth, intellectual growth, and social interactions.

**Nurture** describes environmental factors such as parental styles, physical surroundings, and economic issues.

**Natural selection** is a theory that states that organisms best adapted to their environment tend to survive and transmit their genetic characteristics to succeeding generations.

## Nature vs. Nurture

Jeffrey was a happy, bubbly youngster who enjoyed riding his bike and playing with his pet dog, Frisky. Growing up in the 1960s, he had a stable family, with two loving parents and a younger brother. There was little in Jeffrey's upbringing to suggest that he should develop into anything other than a healthy, well-adjusted adult.

On July 22, 1991, Jeffrey Dahmer, one of the world's most notorious serial killers, was arrested at his Milwaukee apartment. What police found inside was almost unspeakable. Gruesome photos of dismembered body parts, a severed head in the refrigerator, three more heads in the freezer—the list of atrocities went on and on. Further investigation revealed that Dahmer had killed 17 men and boys during a killing spree that went undetected for 13 years. Following a 160-page confession, Dahmer was sentenced to 15 consecutive life terms in

prison. He was murdered in prison by a fellow inmate in 1994.

The story of Jeffrey Dahmer continues to underscore one of the biggest and most enduring issues faced by psychologists. Do our human traits develop through experience, or does a genetic blueprint determine who we will become? Are we primarily defined by **nature**—inherited characteristics that influence personality, physical growth, intellectual growth, and social interactions—or by **nurture**—environmental factors such as parental styles, physical surroundings, and economic issues? Although Dahmer was not subjected to the abuse or neglect that many serial killers experience during childhood, there were several incidents in his past that could have factored into his decline into sadism. A hernia operation at the age of six left him subdued and vulnerable, and he became increasingly isolated when his family moved to a new area. However, many people deal with far more traumatic childhood occurrences without resorting to murder. Was there

personalities? However, a comprehensive study should incorporate other levels of analysis. You might consider whether MRI scans have uncovered patterns that point to specific behavioural traits (the level of the brain), or you might study whether culture affects personality type (the level of the world). Many psychologists believe that it is only possible to understand events at one level of analysis if we take into account what is occurring at the other levels.

## Levels of Analysis

Level of Analysis	Causal Process Studied	Category
Neural	Brain	Biological
Genetic	Genes	
Evolutionary	Natural selection	
Learning	Individual's prior experiences with the environment	Experiential
Cognitive	Individual's knowledge or beliefs	
Social	Influence of other people	
Cultural	Influence of the culture in which the individual develops	
Developmental	Age-related changes	

^ There are many different **levels of analysis** from which to examine a  
^ **psychological issue**.

something inherent in Dahmer’s biological makeup that made his sadistic killing spree inevitable?

## HISTORY OF THE NATURE-NURTURE DEBATE

The nature-nurture debate has been raging at least since the time of the ancient Greeks. Plato’s beliefs—that knowledge is built within us and that character and intelligence are largely inherited—placed Plato firmly in the “nature” camp. Flying the “nurture” flag was Plato’s student, Aristotle, who disagreed with his teacher and claimed that people acquire knowledge by observing the physical world and passing information into the mind via the senses. In the 1600s, Locke and Descartes reignited the debate, with Locke arguing that the mind is a blank slate waiting to be filled by experience, and Descartes countering that some ideas are innate.

When Darwin sailed around the world in 1831, he collected evidence that would lend support to Descartes’s views. Darwin’s theory of **natural selection**, outlined in his 1859 book, *The Origin of Species*, explained variation within species as the result of evolution. Nature selects features that best enable an organism to adapt to its environment, and these features are passed on to future generations. Darwin’s ideas (discussed in Chapter 5) remain the fundamental principles of biology, and the concept that traits may be heritable has strongly influenced contemporary psychology.

After many years of scientific debate and research, most psychologists agree that we become the people we are through a unique combination of hereditary and environmental factors. However, the debate continues with regard to just how influential each factor may be. For example, the subject of intelligence is still a hot-button issue. Canadian researcher J. Philippe Rushton (1991, 1992, 1997) believes that intelligence is 100% genetic. According to Rushton, certain racial groups are genetically or biologically more intelligent than other racial groups. However, University of Guelph researchers Michael Peters (1995, 1996) and Andrew Winston (1996, 2003, 2004) believe that Rushton is incorrect and that differences in intelligence are due to environmental factors, such as biased test questions, poverty, and education. Aspects of the nature-nurture debate may be addressed by considering multiple levels of analysis. For example, a psychologist studying intelligence levels might examine biological factors at the level of the brain by comparing MRI scans of the brains of people



## Are Olympic athletes excellent competitors because of their genes, their environments, or both?

with different levels of intelligence. The psychologist may also examine environmental factors at the level of the person by investigating people’s educational histories and childhood environments.

The nature-nurture debate raises interesting questions for contemporary psychologists. Are people with mental illnesses predisposed to suffer particular conditions, or do stressful life events or other environmental factors trigger mental disorders? How do children learn language—through repetition and education, or via a preprogrammed mechanism that stimulates the development of grammar? The answers to one question in particular may have fascinating social implications: Can people change? Is there hope of rehabilitation for men like Jeffrey Dahmer, or is a serial killer always a serial killer? Are men with the allele 334 gene variant destined to cheat on their wives, or can they overcome their natural urges? Could all Holocaust survivors have gone on to develop the mental fortitude and productivity displayed by George Brady, or did something in Brady’s biological makeup awaken in him a sense of determination rather than one of hopelessness? The nature-nurture debate rages on.

## Types of Psychology

Based on the wide range of issues already mentioned in this chapter, you have probably figured out that the field of psychology

is extremely diverse. The term *psychologist* describes everyone from the therapist listening to a client talking about his or her depression to the researcher measuring how violent video games affect children’s behaviour to the scientist examining the structure of a rat’s brain. Although these professions may seem unrelated, there is a glue that binds all psychologists together—an interest in human behaviours and the processes that influence them.

## PSYCHOLOGICAL ORGANIZATIONS

Like most vocations, psychology has a number of professional bodies that promote specific interests and maintain standards within the industry. In 1892, psychologists, including James Mark Baldwin, founded the American Psychological Association (APA). The APA is now the largest psychological organization in the world, with nearly 150 000 members and 56 professional divisions. Many Canadian and international psychologists belong to the APA. The APA produces a number of books, research papers, and journals, including its official journal, *American Psychologist*. You may have written (or in the near future will write) papers using APA style, which is a formatting style commonly adopted in the social sciences.

Since the APA is primarily geared toward clinical psychology, several research-focused groups have formed their own organizations. In 1939, the Canadian Psychological Association (CPA) was founded, with the specific goals of improving the health and