

# 1

# What Is Psychology?

## CHAPTER OUTLINE

### EXPLORING PSYCHOLOGY

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A Quest for Answers to Ancient Questions  
Early Scientific Approaches to Psychology

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- 2 How do contemporary psychologists approach the study of behaviour?
- 3 Can psychology make us happier?
- 4 What types of careers are available to psychology majors?
- 5 What study habits and skills can help me in this course?

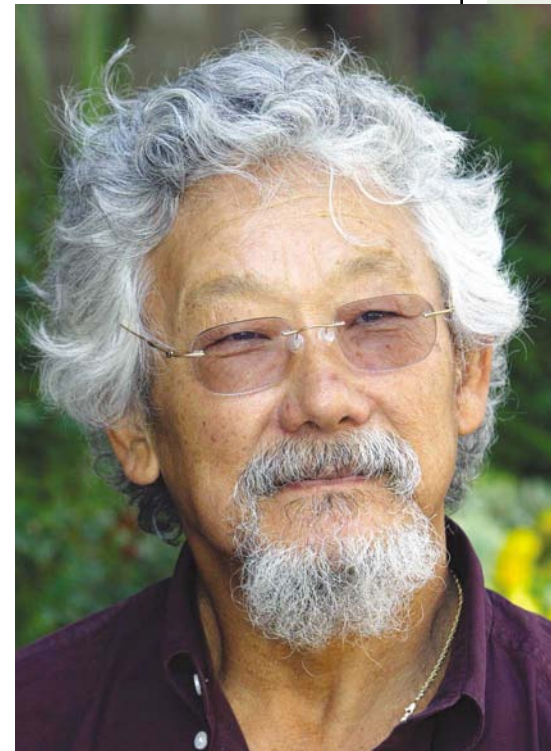
**D**o you ever wonder about things? Curiosity is surely one of the traits we human beings share most often. And we are perhaps most curious when it comes to ourselves and other people. Why do we have trouble losing weight or quitting smoking? What happens when people develop schizophrenia? What does it mean to live with stress? How can we do well in our studies? Why do atrocities happen during warfare? Why is music so interesting? Why do disasters bring out the best in some people? There are so many interesting questions.

Consider Dr. David Suzuki, one of Canada's best-recognized and most loved scientists. Along with many other Japanese-Canadians, his family was interned for four years during World War II. He overcame early feelings of not belonging to have many friends in school, participate in and win public speaking contests, and become president of his high school class. He completed his postsecondary studies quickly on scholarships to American universities and returned to Canada, where he taught at the University of Alberta and the University of British Columbia. His fame as a geneticist grew and he was honoured with many awards, including being named as the best young research scientist in Canada three years in a row. His popularity soared when the CBC began broadcasting his programs, such as "Quirks and Quarks" and "The Nature of Things." In 2004, a CBC poll identified him as one of the ten greatest Canadians of all time.

Suzuki's triumphs raise interesting questions: What factors enable some children to achieve greatness? Is it possible for parents, teachers, and others to shape a child's life and turn him or her into a world-class thinker? In Suzuki's case, he began learning about nature by the age of four, learning the names of the trees, fish, and birds while fishing with his father. Like many Japanese-Canadians, Suzuki's parents had a great respect for education and expected him to work hard to become successful.

Yet when some parents try to get their children to become successful using strategies similar to those of Suzuki's parents, the children end up being miserable and the parents frustrated. What other factors could be involved in Suzuki's success as a scientist beyond supportive parenting and an excellent education? Might David Suzuki have special genes or intellectual skills that most others lack?

The impulse to understand ourselves motivates psychologists, just as it motivates all of us. What differentiates psychologists from most of us is that they take a scientific approach to finding answers to their questions. In this chapter, we explore the scientific approach to psychology, first by surveying the roots of psychological science and the development of different approaches to the study of human behaviour. Second, we explore a variety of career opportunities available to individuals with degrees in psychology. And, third, to help you get the most out of this book and to understand psychology more clearly, we discuss some study strategies and ways to think critically, both in class and in everyday life.



Through his foundation, David Suzuki continues to influence our understanding of how science and technology affect our lives and the world around us ([www.davidsuzuki.org](http://www.davidsuzuki.org)). *What do you think might have motivated David Suzuki to become a great scientist?*

## 1 EXPLORING PSYCHOLOGY

Studying the  
Mind and  
Behaviour

A Quest for  
Answers to  
Ancient Questions

Early Scientific  
Approaches to  
Psychology

### ***What is psychology and how did it develop?***

What motivates people such as David Suzuki to become the best in the world at what they do is one of the many questions that psychologists study. What else do psychologists do?

Imagine that you are seated at a dinner table next to someone you have never met. What comes to mind when you find out she is a psychologist? Might you think, “Uh, oh, I’d better be on my guard because she is going to “psychoanalyze” me and find out what I am really like.”?

Many psychologists do, in fact, analyze people’s problems and try to help them cope more effectively. However, many psychologists are researchers, not therapists. No single image captures the varied activities of psychologists. Consider the following descriptions of some contemporary psychologists at work:

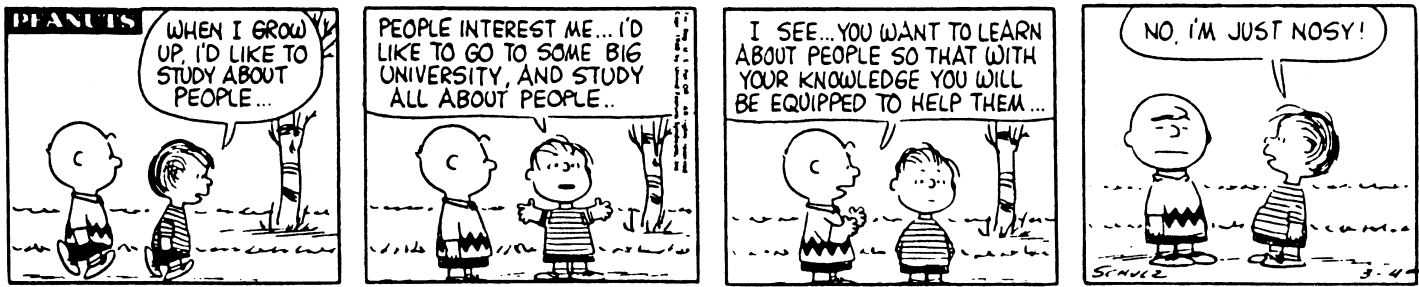
- A cognitive psychologist painstakingly constructs the thousands of steps in a computer program that, when presented with hundreds of sentences, will learn language as an infant does.
- A research psychologist trained in physiological psychology and neuroscience injects epinephrine into a rat that has learned a maze, to determine how that hormone affects the rat’s memory.
- A clinical psychologist probes a depressed client’s thoughts for clues about the cause of the depression and thinks about ways to help the client become psychologically healthier.
- A school psychologist with a background in linguistics and bilingualism designs a program to immerse English-speaking children in French for much of their early childhood education in Ontario.
- A psychologist interested in gender and women’s issues teaches at a community college and works with her college and the community to eliminate sexual harassment.
- An organizational psychologist runs a consulting firm that advises corporations on ways to improve communication and work productivity.
- A forensic psychologist is a trial consultant who prepares witnesses to testify and teaches attorneys how to present themselves to jurors.

These are but a few of the many different portraits of psychologists. As you read further, you will discover that psychology is a diverse field and that psychologists have wide-ranging interests.

### **Studying the Mind and Behaviour**

We all wonder about human behaviour, both our own and other people’s. We try to explain it and predict it using **folk psychology**, the common-sense conceptual framework we use to make sense of our behaviour and that of other people and animals (L. R. Baker, 2001). Because we are all folk psychologists, scientific psychology may strike you as being just more simple common sense. But researchers often turn up the unexpected in human behaviour. For example, it may seem obvious that couples who live together (cohabit) before marriage have a better chance of making the marriage last. After all, practice makes perfect, doesn’t it? But researchers have actually found a higher rate of success for couples who marry before living together (Nock, 1995). It might also seem commonsensical that we would experience more stress and be less happy if we had to function in many different roles than if we functioned in only one role. However, women who engage in multiple roles (such as wife, mother, and career woman) report

**folk psychology** The common-sense conceptual framework we use to make sense of our behaviour and that of other people and animals.



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more satisfaction with their lives than women who engage in a single role or fewer roles (such as wife or wife and mother; Watkins & Subich, 1995). As you can see, psychology doesn't accept assumptions at face value, however reasonable they sound. Instead, psychology is a rigorous discipline that tests assumptions (Pittenger, 2003).

Formally defined, **psychology** is the scientific study of behaviour and mental processes. There are three key terms in this definition: science, behaviour, and mental processes. To understand what psychology is, you need to know what each of these terms means.

Unlike folk psychology, scientific methods are not casual. As a **science**, psychology uses systematic methods to observe, describe, predict, and explain behaviour. Researchers carefully and precisely plan and conduct their studies (Kantowitz, Roediger, & Elmes, 2005). In psychology, it is desirable to obtain results that describe the behaviour of many different people. For example, researchers might construct a questionnaire on sexual attitudes and give it to hundreds of individuals. They might spend considerable time devising the questions and determining the backgrounds of the people chosen to participate in the survey. The researchers might try to predict the sexual activity of university students based on whether their attitudes are liberal or conservative or on their sexual knowledge, for example. After the psychologists have analyzed their data, they will also want to explain their results. If the researchers found that university students are less sexually active than they were a decade ago, for example, they might ask, "Is the reason an increased fear of sexually transmitted diseases?" Because psychologists use the same research methods as physicists, biologists, and other scientists, psychology is a scientific discipline.

Let's now examine what behaviour and mental processes are. **Behaviour** is everything we do that can be directly observed—two people kissing, a baby crying, a university student going on a ski trip.

**Mental processes** are trickier to define than behaviour; they are the thoughts, feelings, and motives that each of us experiences privately but that cannot be observed directly. Though we cannot directly see thoughts and feelings, they are nonetheless real. They include *thinking* about kissing someone, a baby's *feelings* when its mother leaves the room, and a student's *memory* of a ski trip.

Controversy is also a part of science. As scientists conduct research and uncover new findings, they refine or even discard ideas. Healthy debate characterizes the field of psychology. A new psychological perspective has sometimes arisen when one scientist questions the views of another. Ongoing debate and controversy are signs that psychology today is a vigorous, healthy discipline, both in Canada and worldwide (Dobson, 1995). In each chapter of this text, you will find a Critical Reflections box that focuses on a current debate in psychology.

## A Quest for Answers to Ancient Questions

Though scientific psychology is little more than a hundred years old, it seeks to answer questions that people have been asking for thousands of years:

How do our senses perceive the world?

What is the connection between what we think and how we behave?

**psychology** The scientific study of behaviour and mental processes.

**science** In psychology, the use of systematic methods to observe, describe, predict, and explain behaviour.

**behaviour** Everything we do that can be directly observed.

**mental processes** The thoughts, feelings, and motives that each of us experiences privately but that cannot be observed directly.

How do we learn? What is memory?

Are we in conscious control of our lives or is our behaviour determined by unconscious forces?

Why does one person grow and flourish whereas another person struggles in life?

What makes some people smarter than others?

Do dreams matter?

Why do some children so strongly resemble their parents in how they think and act?

How do some children turn out so differently?

Can people learn to be happier and more optimistic?

The questions are old, but the science is young. From the time human language included the word *why* and became rich enough to let people talk about the past, we have been creating myths to explain why things are the way they are. Ancient myths attributed most important events to the pleasure or displeasure of the gods: When a volcano erupted, the gods were angry; if two people fell in love, they had been hit by Cupid's arrows. Gradually, myths gave way to philosophy, the rational investigation of the underlying principles of being and knowledge. People attempted to explain events in terms of natural rather than supernatural causes (Viney & King, 2003).

Historians believe that the idea of an independent human mind may have developed around the sixth century B.C. In India, for example, the Buddha said that it was our own sensations and perceptions that combined to form our human thoughts. The Chinese sage Confucius (551–479 B.C.) believed that the power of thought and decision lay within us (Hunt, 1993).

In the Western tradition, philosophy came of age in ancient Greece in the fourth and fifth centuries B.C. Socrates, Plato, Aristotle, and others debated the nature of thought and behaviour, including the possible link between the mind and the body (Green & Groff, 2003). Later philosophers, especially René Descartes, argued that the mind and body were completely separate, and focused their attention on the mind. Psychology grew out of this tradition of thinking about the mind as distinct from the body (Danziger, 1997; Benjafield, 2004).

Psychology did not emerge only from philosophy. Psychology also has roots in the natural sciences of biology and physiology (Green, Shore & Teo, 2001). The intellectual atmosphere when psychology emerged as a science in the late nineteenth century was dominated by the work of the British naturalist Charles Darwin (1809–1882).

In 1859, Darwin published his ideas in *On the Origin of Species*. He proposed the principle of **natural selection**, an evolutionary process that favours organisms that are best adapted to reproduce and survive. He believed that organisms reproduce at rates that would cause enormous increases in the populations of most species, yet noted that populations remain nearly constant. Darwin reasoned that an intense, constant struggle for food, water, and resources must occur among the young born in each generation, because many of the young do not survive. Those that do survive to adulthood pass their genes on to the next generation. Darwin concluded that organisms with biological features that led to more successful reproduction were better represented in subsequent generations. Over the course of many generations, organisms with these characteristics would constitute an ever-growing percentage, producing a gradual modification of the whole population. If environmental conditions changed, however, other characteristics might become favoured by natural selection, moving the process in a different direction.

Psychology has recently rediscovered Darwin's evolutionary theory and applied it to behaviour. There is an especially strong interest today in interpreting behaviour in terms of its adaptive value and evolutionary development (Cosmides & others, 2003; Larsen & Buss, 2005), including social behaviour (Schaller & Crandall, 2004).

In addition to Darwin's influence on psychology's emergence, physiologists in the mid-nineteenth century, such as the German Johannes Müller, were already proposing that the brain's role is to associate incoming sensory information with appropriate motor responses.

Thus, by the late nineteenth century, conditions were ripe for psychology to emerge as a scientific discipline, a hybrid offspring of philosophy and natural science. Indeed, as

**natural selection** The principle that the organisms best adapted to their environment are the most likely to survive, reproduce, and pass on their genes to their offspring.

we will see shortly, it was a philosopher-physician who put the pieces of the philosophy–natural science puzzle together to create the academic discipline of psychology.

## Early Scientific Approaches to Psychology

The German physiologist Wilhelm Wundt (1832–1920) is most often regarded as the founding father of modern psychology. Students trained by Wundt formed the first generation of North American psychologists. James Mark Baldwin, trained in the Wundtian tradition, established the first psychological laboratory in Canada at the University of Toronto in 1889 (Green, 2004). The most influential of Wundt’s students was E. B. Titchener (1867–1927), an Englishman, who put his own spin on Wundt’s psychology of consciousness after he immigrated to the United States to teach psychology at Cornell University in Ithaca, New York.

Some historians like to say that modern psychology was born in December 1879 at the University of Leipzig, when Wundt and two young students performed an experiment to measure the time lag between the instant at which a person heard a sound and the instant at which that person actually pressed a telegraph key to signal that he had heard. The experiment was one of many attempts to measure human behaviour through physiological measurement.

What was so special about this experiment? Wundt’s experiment was about the workings of the brain: he was trying to measure the amount of time it took the human brain and nervous system to translate information into action. At the heart of this experiment was the idea that mental processes could be studied quantitatively—that is, that mental processes could be measured. This focus ushered in the new science of psychology.

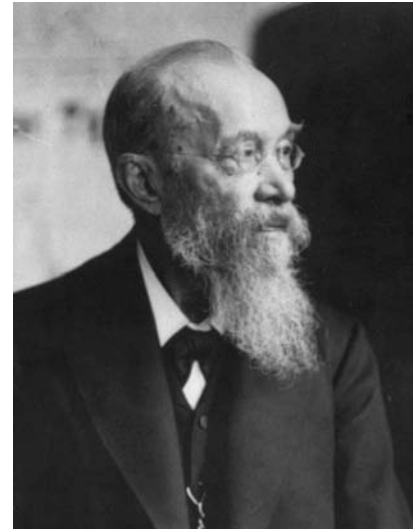
**Structuralism** **Structuralism** is the label given to the search for the basic elements or “structures” of mental life (Hergenhahn, 2001). For example, the structuralists described three different dimensions of *feeling*: pleasure/displeasure, tension/relaxation, and excitement/depression. Although Wundt himself is often described as a structuralist, it is historically more accurate to ascribe that label to the approach of his student, E. B. Titchener (Danziger, 1980).

The most common method used in the study of mental structures was *introspection* (literally, “looking inside”). For this type of experiment, a person was placed in a laboratory setting and was asked to think (introspect) about what was going on as various events took place. For example, the individual might be subjected to a sharp, repetitive clicking sound and asked to report whatever conscious feelings the clicking produced. What made this method scientific was the systematic, detailed self-reports required of the person in the controlled laboratory setting.

These studies focused mainly on sensation and perception because they were the easiest processes to break down into component parts. For example, Titchener used the introspective method to study taste. He trained participants to identify and record their taste sensations. The outcome was the identification of four components of taste: bitter, sweet, salty, and sour. In the long run, though, conscious introspection was not a very productive method of exploring the basic elements of human behaviour.

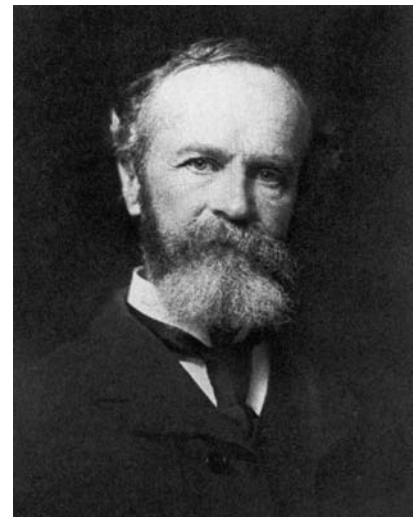
**Functionalism** In contrast to structuralism, which focused on describing the components of the mind, **functionalism** emphasized the functions of mind and behaviour in adapting to the environment. The structuralists were less interested in the person’s interaction with the environment, a major theme of the functionalists. Thus, in a way, the structuralists were looking *inside* the mind, searching for its structures, whereas the functionalists were looking more at what was going on in the person’s interaction with the *outside* world.

The American psychologist William James (1842–1910) and other functionalists did not believe in the existence of elementary, rigid structures of the mind. James saw the mind as flexible and fluid, characterized by constant change and adaptation in response to a flow of information. He called this flow a *stream of consciousness*.



**WILHELM WUNDT (1832–1920)**

Founded the first psychology laboratory (with his co-workers) in 1879 at the University of Leipzig in Germany.

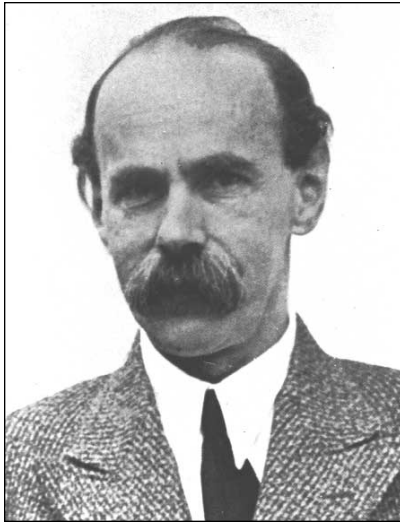


**WILLIAM JAMES (1842–1910)**

What was his functionalist approach like?

**structuralism** An early school of psychology that attempted to discover the basic elements (structures) of the human mind.

**functionalism** An early school of psychology that emphasized the interaction between the mind and the outside environment.



**MAX WERTHEIMER (1880–1943)**

Founded the Gestalt school of psychology.

**Gestalt Psychology** The founder of **Gestalt psychology**, Czech-born German psychologist Max Wertheimer (1880–1943), criticized structuralism and the introspection approach as misleading. He argued that consciousness is best understood as the perception of unified wholes or “gestalts,” which are greater than the sum of their parts.

For example, think about a lighted sign made up of a series of successively flashing lights in the shape of an arrow. You perceive a whole, an arrow moving in the direction of the tip. But the parts, the individual lights, are stationary. Your perception of movement comes from the brain but only when the parts are in the correct relationship to each other. This is *relational determinism*. The parts must be in the proper order and timing to result in the intended perception.

As a second example, if you hear a piece of music played at a different pitch by a different instrument the tune might puzzle you but your brain may supply the proper timing and recognition of the tune. This illustrates the Gestalt principle of *transposability*. If the parts, the notes, are at a higher or lower pitch, they are different but the whole, the tune, is still recognized as the same. In other words, it is not the parts that are important for the perception of the tune, it is the pattern or organization of parts.

Gestalt psychologists went further and argued that parts can change because they are in a relation to a whole. Apply this to yourself and your experience in different groups. In some groups you are lively, in other groups you are quiet. Not only is the whole group different from the sum of the parts but you as a part differ because of the particular group.

The following review should help you reach the learning goals related to this initial exploration of the field of psychology.

### > reflect and review

#### 1 Explain what psychology is and how it developed.

- Define psychology, and explain the three terms contained in the definition.
- Describe the contributions of philosophy and natural science to psychology.
- Define structuralism, functionalism, and Gestalt psychology and explain how they differ.

*Are there some questions about your mind and behaviour that a deeper understanding of psychology might help you answer?*

## 2 CONTEMPORARY APPROACHES TO PSYCHOLOGY

The  
Behavioural  
Approach

The  
Psychodynamic  
Approach

The  
Cognitive  
Approach

The  
Behavioural  
Neuroscience  
Approach

The  
Evolutionary  
Psychology  
Approach

The  
Sociocultural  
Approach

### **How do contemporary psychologists approach the study of behaviour?**

The three approaches we have just discussed—structuralism, functionalism, and Gestalt psychology—are no longer considered to be contemporary approaches to psychology. However, contemporary psychology has absorbed some aspects of these approaches. Psychologists still have an interest in the structures of the brain and how they function. They also stress the importance of the person’s interaction with the environment and the importance of the interaction of parts to perceive the whole. Psychologists today realize that human thought and behaviour are influenced by many factors, including common biological heritage, biological variations from person to person, and experience. In addition to immediate environmental influences, such as our physical and social surroundings, psychologists also recognize the broader influence of culture.

**Gestalt psychology** An early school of psychology that emphasized that, in perception, the whole is greater than the sum of the parts.

Efforts to understand the complexity of mental processes and behaviour have given rise to a number of broad approaches in psychology. The following sections will introduce six contemporary approaches: behavioural, psychodynamic, cognitive, behavioural neuroscience, evolutionary psychology, and sociocultural. Knowing about these approaches is important because many of the debates and controversies in psychology reflect differences in researchers' perspectives. In addition, much of the research discussed later in the text can be understood more clearly against the background of one or more of these approaches.

As you consider the six approaches and how they might illuminate human thought and behaviour, keep three ideas in mind:

1. Although psychology may often seem to focus on the individual, human beings are profoundly social. They need other people to satisfy their wants and needs. Parents, teachers, peers, friends, and partners in close relationships play important roles in our socially connected lives (Borstein & Bradley, 2003; Collins & others, 2003). How we treat others and they us, whether caring or hurting, stirs our thoughts and emotions.
2. Theories can help us to understand human behaviour in general, but there is still enormous individual variation. No two lives play out in the same way. Roommates, parents and children, teachers and students, and friends and lovers soon discover their differences. One task of psychology is to chart not only our commonalities but also what makes us unique (Stanovich, 2004). Your mixture of genes and experiences cannot be duplicated. Even in these days of animal cloning and the potential for human cloning, experience uniquely imprints each person's life (Gottlieb, 2002a; Moore, 2001).
3. Keep in mind that one approach is not necessarily better than another. Some approaches are more useful in some situations and at certain times in the development of the field. Individual psychologists may become invested in a particular approach, but all six approaches provide valid ways of looking at human behaviour. Just as blueprints, floor plans, and photographs are all valid ways of looking at a house, some approaches are better for some purposes than others. For instance, a floor plan is more useful than a photograph for deciding how much lumber to buy. Similarly, the behavioural neuroscience approach is more useful than the sociocultural approach for explaining the fundamental aspects of perception. At the same time, the sociocultural approach is more useful than the behavioural neuroscience approach for understanding how to reduce prejudice and discrimination.

## The Behavioural Approach

The **behavioural approach** emphasizes the scientific study of observable behavioural responses and their environmental determinants. In other words, the behavioural approach focuses on interactions with the environment that can be seen and measured. The principles of the behavioural approach also have been widely applied to help people change their behaviour for the better. The psychologists who adopt this approach are called *behaviourists*. Under the intellectual leadership of John B. Watson (1878–1958) and B. F. Skinner (1904–1990), behaviourism dominated psychological research during the first half of the twentieth century (Benjafield, 2004; Mills, 1998).

While many studies with a behavioural approach take place in experimental laboratories under carefully controlled conditions, some take place in natural settings, such as schools and homes. Skinner himself often conducted applied research and even studied the effect of a controlled environment called an Air-Crib on his own daughter.

Skinner emphasized that what we *do* is the ultimate test of who we are, not what we think. He believed that rewards and punishments determine our behaviour. For example, a child might behave in a well-mannered fashion because her parents have rewarded this behaviour. An adult might work hard at a job because of the money he gets for his effort. We do these things, say behaviourists, not because of an inborn

**behavioural approach** Emphasizes the scientific study of behaviour and asserts that behaviour is shaped by the environment.



B. F. Skinner was a tinkerer who liked to make new gadgets. The younger of his two daughters, Deborah, spent some time in Skinner's enclosed Air-Crib. Some critics accused Skinner of monstrous experimentation with his children; however, the early controlled environment has not had any noticeable harmful effects. Debbie, shown here as a child with her parents, is currently a successful artist, is married, and lives in London. *In what ways would a controlled environment (such as the Air-Crib) for very young children help their development?*



motivation to be competent people but rather because of the environmental conditions we have experienced and continue to experience (Skinner, 1938).

Contemporary behaviourists still emphasize the importance of observing behaviour to understand an individual and continue to use the rigorous sorts of experimental methods advocated by Watson and Skinner (Martin & Pear, 2003; Watson & Tharp, 2003). They also continue to stress the importance of environmental determinants of behaviour (Baldwin & Baldwin, 2001; Spiegler & Guerremont, 2003). However, not every behaviourist accepts the earlier behaviourists' rejection of thought processes (often called cognition).

**Social cognitive theory** stresses that behaviour is determined not only by environmental conditions but also by how thoughts modify the effects of environment on behaviour (Bandura, 1986, 2001). Social cognitive theory was proposed by Albert Bandura, who was born in Alberta, received his undergraduate education at the University of British Columbia, and has since gone on to become one of the ten most *cited* psychologists (a *citation* occurs when one scholar makes note of the work of another scholar; in this paragraph, we are citing Bandura's work). Bandura believes that imitation is one of the main ways in which we learn about our world. To reproduce a model's behaviour, we must enter and store the information in memory, which is a mental (cognitive) process. Thus social cognitive theorists have broadened the scope of behaviourism to include not only observed behaviour but also the ways in which the mind processes information about the environment.

In one of Bandura's classic experiments (Bandura, 1965), children watched a film in which a model was rewarded, punished, or experienced no consequences for being aggressive. Bandura observed how aggressive the children were after they watched the film. He found that children who watched the model being rewarded for being aggressive were subsequently more aggressive themselves than children who saw the model being punished or receiving no consequences for being aggressive.

*What can the behavioural approach tell us about David Suzuki?* Behaviourists would tell us not to look inside David Suzuki to try to find out what makes him a great scientist. According to behaviourists, motives and feelings cannot be directly observed so

**social cognitive theory** Stresses that behaviour is determined not only by environmental conditions but also by how thoughts modify the impact of environment on behaviour.

they really won't help us understand his behaviour. Behaviourists would examine Suzuki's learning history. They would note his practice for, and participation in, public-speaking contests. As well, they would note the praise he earned from his parents and teachers for his achievements in school. Social cognitive theorists, like Bandura, would stress that Suzuki developed his scientific skills through extensive observational learning. They would also suggest that David Suzuki developed positive expectations and the self-confidence to become a great scientist through his interactions with others.

## The Psychodynamic Approach

The **psychodynamic approach** emphasizes unconscious thought, conflict between biological instincts and society's demands, and early family experiences. This approach argues that unlearned biological instincts, especially sexual and aggressive impulses, influence the way people think, feel, and behave. These instincts, buried deep within the unconscious mind, are often at odds with society's demands. Although Sigmund Freud (1856–1939), the founding father of the psychodynamic approach, saw much of psychological development as instinctual, he believed that early relationships with parents are the chief forces that shape an individual's personality. Freud's (1917) theory was the basis for the therapeutic technique that he termed *psychoanalysis*. His approach was controversial when he introduced it in Vienna at the beginning of the twentieth century. However, his ideas played a major role in shaping 20th century thought, and many psychologists still find his insights about human behaviour valuable (Gedo, 2002).

Unlike the behavioural approach, the psychodynamic approach focuses almost exclusively on clinical applications rather than on experimental research. For this reason, psychodynamic theories always have been controversial and difficult to validate. Nonetheless, they are an important part of psychology. Today's psychodynamic theories tend to place less emphasis on sexual instincts and more on cultural experiences as determinants of behaviour.

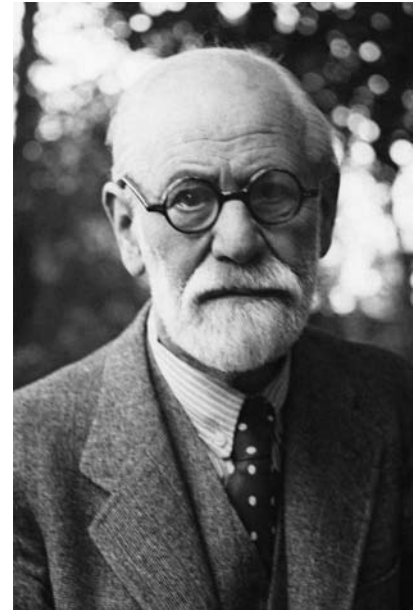
*What can the psychodynamic approach tell us about David Suzuki?* The psychodynamic approach suggests that David Suzuki is likely to be unaware of why he became a prominent scientist and popularizer of science and why he behaves the way he does. It also suggests that his early experiences with his parents likely formed his outgoing personality and ability to get along with others.

## The Cognitive Approach

According to cognitive psychologists, your brain hosts or embodies a "mind," whose mental processes allow you to remember, make decisions, plan, set goals, and be creative (J. A. Anderson, 2005; Sternberg, 2003a). The **cognitive approach**, then, emphasizes the mental processes involved in knowing: how we direct our attention, how we perceive, how we remember, and how we think and solve problems. For example, cognitive psychologists want to know how we solve algebraic equations, why we remember some things for only a short time but remember others for a lifetime, and how we can use imagery to plan for the future (Benjafield, 1997; Bruning & others, 2004).

Cognitive psychologists view the mind as an active and aware problem-solving system (Baddeley, 2000, 2003). This positive view contrasts with the behavioural view, which portrays behaviour as controlled by external environmental forces. The cognitive view also contrasts with pessimistic views (such as those of Freud) that see human behaviour as being controlled by instincts or other unconscious forces. In the cognitive view, an individual's mental processes control behaviour through memories, perceptions, images, and thinking (Solso, MacLin, & MacLin, 2005).

One area of cognitive research that occasionally gets attention in news coverage of criminal trials is eyewitness identification (e.g., Yuille & Daylen, 1998). The potential bias in eyewitness identification was revealed in a classic experiment in which students



**SIGMUND FREUD (1856–1939)**

*What was the nature of his psychoanalytic approach?*

**psychodynamic approach** Emphasizes the unconscious aspects of the mind, conflict between biological instincts and society's demands, and early family experiences.

**cognitive approach** Focuses on the mental processes involved in knowing: how we direct our attention, perceive, remember, think, and solve problems.

in an introductory psychology class were asked to view 10 “criminals” (actually graduate and senior undergraduate white males) for 25 seconds each (Brown, Deffenbacher, & Sturgill, 1977). The experimenter told the class to observe the “criminals” carefully because they would later have to pick out the “criminals” from mug shots. Ninety minutes later the students looked at 15 mug shots and were asked whether each person had appeared earlier in front of the class. Five of the 15 mug shots were of people who actually had appeared. These five “criminals” were correctly identified 72 percent of the time. However, the ten “noncriminals” were incorrectly identified as having appeared in front of the class 45 percent of the time. This study indicates that people in mug shots might be falsely accused and reflects how inaccurate our memories can sometimes be.

*What can the cognitive approach tell us about David Suzuki?* Cognitive psychologists would be impressed with David Suzuki’s ability to process information, especially his ability to concentrate and focus his attention. They would also be interested in his ability to remember the volume of scientific information he encounters every day. Cognitive psychologists might be intrigued by Suzuki’s ability to solve problems and make decisions, not only while working in the laboratory or for his foundation, but in his daily life as well.

### The Behavioural Neuroscience Approach

The **behavioural neuroscience approach** emphasizes that the brain and nervous system are central to understanding behaviour, thought, and emotion. Neurobiologists believe that thoughts have a physical basis in the brain (Kolb & Whishaw, 2003; Rains, 2002). They also believe that when injury and disease assault the brain, its powerful role in influencing behaviour becomes apparent (Melzack, 1989; Mitchell, 1989). The human brain and nervous system constitute the most complex, intricate, and elegant system imaginable. The human brain is only a 1.5-kilogram lump of matter, but in this lump are more than 100 billion interconnected nerve cells. Electrical impulses zoom through our brain cells, and chemical substances are released as we think, feel, and act.

Behavioural neuroscience originated with the 1949 publication, by McGill University psychologist D. O. Hebb, of *The Organization of Behaviour*. Hebb stressed the need for an interdisciplinary approach to brain and behaviour, emphasized the central problem of internal mental processes, critiqued then-current theories of learning and perception, and proposed a broad and imaginative theory of his own (Fentress, 1999).

Much of what we know about the brain comes from research on animals that have simpler brains with far fewer nerve cells than humans (Changeux & Chavillon, 1995; Wicks, Roehrig, & Rankin, 1996). Consider the memory of the sea slug, a tiny snail with only about 10,000 nerve cells. The sea slug is a slow creature, but if given an electric shock to its tail, it withdraws the tail quickly—and even more quickly if the tail was previously shocked. In a primitive way, the sea slug remembers. The memory is written in chemical code, called a *neurotransmitter*. Shocking the sea slug’s tail releases a neurotransmitter that reminds the organism that the tail was previously shocked. This memory informs the nerve cells to send out chemical commands to retract the tail (Kandel & Schwartz, 1982). As nature builds complexity out of simplicity, so the mechanism used by the sea slug may work in the human brain as well. In humans, the memory might come from the sight of a close friend, a dog’s bark, or the sound of a car horn. Thus, neurotransmitters are the ink with which memories are written.

*What can the behavioural neuroscience approach tell us about David Suzuki?* Neuroscientists are intrigued by the neural circuitry that underlies virtually all behaviours. They would be interested in the brain processes that underlie David Suzuki’s intellectual and social skills. They would attempt to explain how Suzuki’s brain coordinates so many things so quickly to allow him to function as a top-flight scientist and communicator.

**behavioural neuroscience approach** Views understanding the brain and nervous system as central to understanding behaviour, thought, and emotion.



In one research study, an “enriched” environment rewired the brains of rats by dramatically increasing their neural connections and neurochemical activity (Rosenzweig, Bennett, & Diamond, 1972). In psychology and life, both biological and environmental processes matter. *Can you think of other ways scientists might study how “enriched” environments might influence behaviour?*

## The Evolutionary Psychology Approach

Although Darwin introduced the theory of evolution by natural selection in the middle of the nineteenth century, his ideas about evolution have only recently become a popular framework for explaining behaviour. One of psychology’s newest approaches, the **evolutionary psychology approach** emphasizes the importance of adaptation, reproduction, and “survival of the fittest” in explaining behaviour (Barkow, 2005). Evolution favours organisms that are best adapted to survive and reproduce in a particular environment. The evolutionary psychology approach focuses on the conditions that allow individuals to survive or fail. In this view, natural selection favours behaviours that increase an organism’s reproductive success and ability to pass its genes to the next generation (Daly & Wilson, 1983).

David Buss (2004) argues that, just as evolution shapes our physical features, such as body shape and height, it also pervasively influences how we make decisions, how aggressive we are, our fears, and our mating patterns. Thus it is argued that the way we adapt in our world today can be traced to problems that animals and early humans faced in adapting to their evolutionary environments.

Steven Pinker (1999, 2002) also believes that evolutionary psychology is an important approach to understanding behaviour. According to Pinker, the way the mind works can be summarized by three points: (1) the mind computes, (2) the mind was designed to compute by evolution, and (3) these computations are performed by specialized brain systems that natural selection has designed to achieve specific kinds of goals, such as survival. Thus, in Pinker’s view, the mind analyzes sensory input in ways that would have benefited prehistoric human hunters and gatherers. People with minds that understood causes and effects, who could build tools, set traps, and avoid poisonous mushrooms, had the best chance of surviving and having offspring that would some day invent mathematics and make movies about robots.

Evolutionary psychologists believe that their approach provides an umbrella that unifies the diverse fields of psychology. Not all psychologists agree. Some argue that it is unlikely that one approach can unify the diverse, complex field of psychology



Neuroscientists have studied the memory of the sea slug, a tiny snail with only about 10,000 nerve cells. *How did they investigate the sea slug’s memory?*

**evolutionary psychology approach** Emphasizes the importance of functional purpose and adaptation in explaining why behaviours are formed, are modified, and survive.



In Xinjiang, China, a woman prepares for horseback courtship. Her suitor must chase her, kiss her, and evade her riding crop—all on the gallop. A new marriage law took effect in China in 1981. The law sets a minimum age for marriage—22 years for males, 20 years for females. Late marriage and late childbirth are critical efforts in China's attempt to control population growth. *What do you think about such laws?*



The tapestry of Canadian culture has changed with the increasing ethnic diversity of Canada's citizens. According to Statistics Canada, by 1996 only 20 percent of Canadians had their origins in the British Isles or France. The rest have come from around the globe, with visible minorities making up the fastest-growing group. Two of psychology's challenges are to become more sensitive to race and ethnic origin and to provide improved services to ethnic minority individuals. *What might these communication strategies be like?*

(Graziano, 1995). Others stress that the evolutionary approach does not adequately account for cultural diversity (Paludi, 2002). But the evolutionary psychology approach is young, and its future may be fruitful (Cosmides & others, 2003).


*What can the evolutionary psychology approach tell us about David Suzuki?* The evolutionary approach would stress that David Suzuki's scientific abilities are the result of a long evolutionary process in which genes involving excellent intellectual capacities survived and were passed down from generation to generation. This approach would also call attention to the adaptive behaviour that allows Suzuki to function competently in his world.

## The Sociocultural Approach

The **sociocultural approach** examines the ways in which the social and cultural environments influence behaviour. The sociocultural approach argues that a full understanding of a person's behaviour requires knowing about the cultural context in which the behaviour occurs. For instance in some cultures, such as in Canada, it is entirely acceptable for a woman to be assertive, but in another culture, such as in Iran, the same behaviour may be considered inappropriate (e.g., Berry & Triandis, 2004).

The sociocultural approach focuses not only on comparisons of behaviour across countries but also on the behaviour of people from different ethnic and cultural groups within a country, such as the behaviour of Aboriginal Canadians. One such area of interest is in the acculturation of immigrants in their new countries. (Berry & others, 2005; Sam & Berry, 2004). Thus, there is increasing interest in the behaviour of new Canadians from third-world countries, especially in terms of the factors that have restricted or enhanced their ability to acculturate and cope with living in a predominantly English- and French-speaking society (e.g., Attaca & Berry, 2002).

**sociocultural approach** Emphasizes social and cultural influences on behaviour.

	Approach	Emphasis	A Sample Question the Approach Might Ask About David Suzuki
	Behavioural	The scientific study of observable behavioural responses and their environmental determinants. Social cognitive theory is a contemporary behavioural approach	Why has Suzuki found science so rewarding ever since he was a young child?
	Psychodynamic	Unconscious thought, early family experiences, and the conflict between biological instincts and society's demands	How much of Suzuki's ambition derives from his mother's and father's differing early influences on him?
	Cognitive	The mental processes involved in knowing	How does Suzuki's memory store information about scientific research?
	Behavioural Neuroscience	The centrality of the brain and nervous system in understanding behaviour	How does Suzuki's brain allow him to notice patterns in nature?
	Evolutionary Psychology	The importance of adaptation, reproduction, and "survival of the fittest"	How has the evolution of the brain made possible Suzuki's analytic scientific skills?
	Sociocultural	The social and cultural determinants of behaviour	Does Suzuki's ethnic background matter in his life and career as a scientist?

**FIGURE 1.1** Questions about David Suzuki Derived from Six Psychological Approaches

The growing diversity of Canadian culture promises not only the richness that diversity produces but also difficult challenges in extending fuller opportunities to all ethnic-minority individuals (Berry, 1999). Queen's University cross-cultural psychologist John Berry (1993) suggests that our low population density, cultural, social, and linguistic dualism (French and English), and growing cultural pluralism requires a uniquely Canadian response (e.g., Preuger & Rogers, 1993).

Religion is also an important area of cultural study in psychology (Altemeyer, 2004a; Altemeyer & Hunsberger, 2004; Peterson, 1999). Similarly, a special concern of feminist writers is that, in much of its history psychology has portrayed human behaviour with a "male-dominant" theme (Pyke, 1997).

*What can the sociocultural approach tell us about David Suzuki?* The sociocultural approach would be especially interested in David Suzuki's ethnic background and how this might have hindered or helped the development of his skills and behaviour. Suzuki has been sustained throughout his life by a strong sense of values, which he learned from his family and from Japanese-Canadian culture. These values allowed him to rise above the pain inflicted on him by the internment of Japanese-Canadians in the Second World War and by racial discrimination to become one of the best-recognized and best-loved Canadians. The sociocultural approach would also be interested in the achievement context of Canadian culture and how this influenced his motivation. Figure 1.1 can help you remember the emphasis of the sociocultural approach and how psychologists with a sociocultural approach would think about David Suzuki as a scientist. For comparison, the figure also includes the emphases of psychologists who adopt a different approach and examples of the questions they might pose about Suzuki.

The sociocultural approach can provide insights into behaviour that other approaches do not adequately explain, such as altruism. See the Critical Reflections box for a discussion of this topic.

## Can Humans Really Be Altruistic?

If there was a silver lining in the dark days following the Asian tsunami of December 26, 2004, it was that many people, including emergency personnel, local residents and tourists, altruistically risked their own lives to help other people caught up in the onrushing waves. In the following weeks, millions more around the globe contributed their time and money to send much-needed aid to stricken areas. Altruistic behaviour is often defined as voluntary behaviour that is intended to benefit others and is not motivated by any expectation of personal gain. The most extreme form of altruism is giving one's life to save someone else, as some of those who responded to the December 26 tsunami did.

Altruism poses an important problem for the evolutionary psychology approach (Caporael, 2001). According to Charles Darwin's theory of evolution, behaviours that favour an organism's reproductive success are likely to be passed on to future generations. In fact, altruistic behaviour *reduces* a person's chances of reproductive success. Therefore, altruists should be at a clear disadvantage compared with those who act more selfishly, ensuring the propagation of their own genes. Over many generations, selfish behaviour should be favoured and altruistic behaviour should die out.

Referring to altruistic behaviour among social insects, Darwin (1859/1979) wrote about one circumstance that is difficult for evolutionary theory to explain. Worker bees, born without the ability to reproduce, spend their lives caring for the offspring of the queen bee in their hive. Natural selection predicts that sterile worker bees should become extinct over time. How, then, could there be such a thing as a sterile worker bee?

Seen through the Darwinian lens of the "survival of the fittest," human altruism also appears implausible. The concept of *kin selection* provides one way to reconcile altruism with evolutionary theory. According to this concept, our genes survive not just when we reproduce but also when our relatives reproduce. Kin selection includes the idea of *inclusive fitness*, which is measured by the number of our direct descendants and those of our relatives, in proportion to their degree of relationship with us. The worker bees in a hive turn out to be genetically related to the queen bee and, therefore to all the other bees in the hive, including any eggs the queen bee lays. Thus, even though a worker bee has no direct offspring, its inclusive fitness is high when the hive thrives. The theory of kin selection can explain why some people forego having their own children and choose instead to care for relatives and relatives' children. What this theory cannot explain is altruism directed toward people outside the family, especially toward strangers.

To deal with this difficulty, evolutionary psychologists have begun to explore the evolutionary bases of *reciprocity*. This idea is that we may have evolved to help other people, even total strangers, in the



A volunteer carries a box containing clothes to be sent as relief supplies for victims, in Bangalore, India, of the December 26, 2004 Asian tsunami. *Why are humans altruistic?*

expectation that, at some future time, we may get help in return (Field, 2002).

In contrast to the evolutionary psychology approach, the socio-cultural approach attempts to explain altruistic behaviour as being the result of social and cultural experiences (Dovidio & Penner, 2001). According to this approach, each of us is a product of many culturally and socially derived relationships, which continually unfold over time. Because our relationships within our culture are open-ended and adaptable rather than rigidly determined by our genes, genuine acts of altruism are possible. Simply put, if our culture teaches us to be kind without regard for our own gain, then we can become true altruists.

By providing a theory that emphasizes the importance of adaptation and natural selection in explaining all behaviour, the evolutionary psychology approach has much to recommend it (Belk & Ruse, 2000). It forces us to look at our capacity for selfishness and to refine our notions of kindness and altruism. Yet the sociocultural approach is also attractive, because it stresses that people can be genuinely altruistic. This possibility is what we think about when we think about the rescuers who risked, and sometimes lost, their lives on December 26, 2004 and the millions who contributed aid in the weeks that followed. In the end, this contrast in views may well serve to sharpen our understanding of what it is to be fully human.

### What do you think?

- Are people ever truly altruistic? Or are they always operating according to selfish motives?
- Have you ever acted in a truly altruistic fashion? Or could your behaviour be explained by theories of kin selection?
- What kind of research might settle the question of whether humans are capable of genuine altruism?

## > reflect and review

### 2 Describe six contemporary approaches to psychology.

- Define each of the six approaches in your own words.
- Some approaches emphasize what is going on inside of the person. Others focus on the outside environment. Compare the approaches.

*Suppose you could talk with a psychologist from each of the six approaches. Think about the members of your family and other people you know. Write down at least one question you might want to ask each of the psychologists about the thoughts and behaviours of these people.*

## 3 A POSITIVE APPROACH TO PSYCHOLOGY

The  
Humanistic  
Movement

The Positive  
Psychology  
Movement

### Can psychology make us happier?

If you are like most people, you probably associate psychology with problems such as depression, violence, and eating disorders. Psychologists, too, sometimes think that their field focuses too much on the negative and not enough on the positive aspects of behaviour.

Psychology deals with both the positive and negative aspects of life. When the tone of psychology was believed to be too negative, two movements emerged to focus on the positive effects psychology can have on people's lives. One of these movements (humanistic) appeared in the middle of the twentieth century; the other (positive psychology) began gaining momentum at the beginning of the twenty-first century. Let's explore these two movements.

### The Humanistic Movement

The **humanistic movement** emphasizes a person's positive qualities, capacity for positive growth, and freedom to choose a destiny. Humanistic psychologists stress that people have the ability to control their lives and avoid being manipulated by the environment (Maslow, 1971; Rogers, 1961). They believe that, rather than being driven by unconscious sexual and aggressive impulses, as the psychodynamic approach dictates, or by external rewards, as the behavioural approach emphasizes, people can choose to live by higher human values, such as altruism and free will. Humanistic psychologists also think that people have a tremendous potential for conscious self-understanding and that the way to help others achieve self-understanding is by being warm, nurturant, and supportive of them. Many aspects of this optimistic approach to defining human nature appear in clinical practice today.

### The Positive Psychology Movement

The end of an old century and the beginning of a new one can stimulate reflections on what has been and visions of what could be and should be. In 2000, two influential American psychologists, Mihaly Csikszentmihalyi and Martin Seligman, edited a special issue of the journal *American Psychologist* on the theme of positive psychology (Seligman & Csikszentmihalyi, 2000).

Their analysis of psychology in the twentieth century was that it had become far too negative, focusing on what can go wrong in people's lives rather than on what they

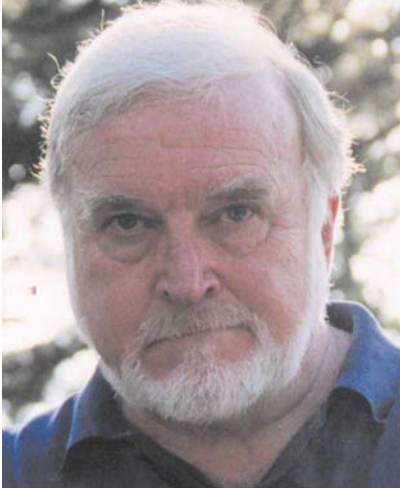


Humanists believe that we have a natural tendency to be loving toward each other and that each of us has the capacity to be a loving person.

**humanistic movement** An emphasis on a person's capacity for personal growth, freedom to choose a destiny, and positive qualities.

**positive psychology movement** A strong emphasis on the experiences that people value subjectively (such as happiness), positive individual traits (such as the capacity for love), and positive group and civic values (such as responsibility).





Mihaly Csikszentmihalyi, one of the main architects of the current positive psychology movement.

can do competently. Too often, they said, psychology has characterized people as passive and victimized.

Seligman, Csikszentmihalyi, and others hope to usher in a new focus on the positive things that psychology can accomplish (Diener, 2000; Nakamura & Csikszentmihalyi, 2003; Seligman, 2002). They describe the **positive psychology movement** as giving a stronger emphasis to and conducting more research on three general topics (Seligman & Csikszentmihalyi, 2000):

1. Experiences that people value subjectively, such as hope, optimism, and happiness
2. Positive individual traits, such as the capacity for love, work, creativity, talent, and interpersonal skills
3. Positive group and civic values, such as responsibility, nurturance, civility, and tolerance

This is a worthwhile goal. Throughout this book we talk about the positive potential of psychology and the ways in which it can enable individuals and groups to take more control of their own lives and to live them in a more fulfilling way. We also frequently link theory with specific applications that demonstrate psychology's contributions in these positive settings.

### > reflect and review

3

**Describe two movements that reflect a positive approach to psychology.**

- Explain the nature of the humanistic movement.
- Describe the positive psychology movement.

*Think about what you read in the newspaper and see on television and at the movies. Does the information focus more on the negative or the positive aspects of people's lives? Why might the media present more negative than positive stories? Are they just giving their readers and viewers what they want? Are there ways in which the positive psychology movement could help to change the media's negative orientation?*

## 4 PSYCHOLOGY'S CAREERS AND AREAS OF SPECIALIZATION

Careers in  
Psychology

Areas of  
Specialization  
in Psychology

### **What types of careers are available to psychology majors?**

Psychologists don't spend all of their time in a laboratory, white-smocked with clipboard in hand, observing rats and crunching numbers. Some psychologists spend their days seeing people with problems; others teach at universities and conduct research. Still others work in business and industry, designing more efficient criteria for hiring. In short, psychology is a field with many areas of specialization.

### **Careers in Psychology**

Have you ever thought about majoring in psychology? Students who major in psychology often find that the subject matter is highly interesting. You have already encountered some interesting topics in this chapter, including the brain's role in behaviour and analyzing the lives of people such as David Suzuki from a psychological perspective. In the remaining chapters of this book, you will encounter hundreds more truly fascinating inquiries in psychology.

Not only do you gain considerable knowledge and understanding of the mind and behaviour by majoring in psychology, but majoring in psychology also equips you with



**FIGURE 1.2** Some Job Possibilities for Students with an Undergraduate Degree in Psychology

a rich and diverse portfolio of skills that will serve you well in many different types of work, both practical and professional. A major in psychology helps you improve your skills in research, measurement and computing, problem solving and critical thinking, and writing (Hayes, 1997). Integrating these skills, which span the arts and sciences, provides you with unique qualifications. Even if you are not a psychology major and do not plan to major in psychology, this course and others in psychology can give you a richer, deeper understanding of many areas of life.

Psychology also pays reasonably well (Sternberg, 1997c). Psychologists earn well above the median salary in North America. It is unlikely that you would live in a palatial mansion because you majored in psychology, but it is also unlikely that you would go broke. A major in psychology enables you to improve peoples' lives, to understand yourself and others, possibly to advance the state of knowledge in the field, and to have an enjoyable time while you are doing these things.

An undergraduate degree in psychology can give you access to a variety of jobs. For a list of some of the job possibilities in business, social and human services, and research, see figure 1.2. If you choose a career in psychology, you can greatly expand your opportunities (and your income) by getting a graduate degree, either a master's or a doctorate. Born in Canada, Peter Pirolli obtained his undergraduate degree from Trent University and his Ph.D. in cognitive psychology from Carnegie-Mellon. Now a principal scientist at the Xerox Palo Alto Research Center in California, Pirolli investigates how people use computers, for example to find information on the World Wide Web (Pirolli, 2003, in press). Anna Marie Apanovitch, who has a Ph.D. in experimental psychology, is now a senior marketing analyst at Bayer Corporation (O'Connor, 2001). She is part of a team that does objective, cost-effective analysis of different marketing programs for various drugs, such as aspirin.

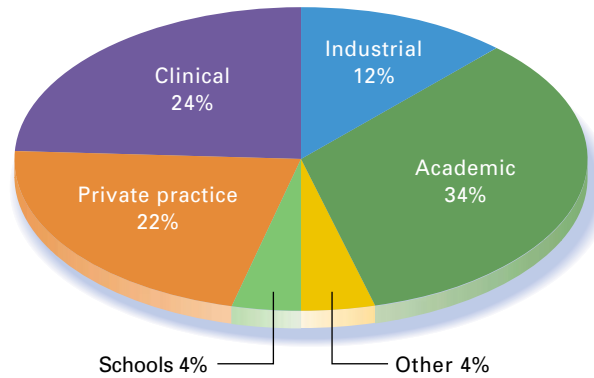
Where do psychologists work? Slightly more than one-third are teachers, researchers, or counsellors at colleges or universities. Most other psychologists work in clinical and private practice settings (see figure 1.3).

## Areas of Specialization in Psychology

If you were to go to graduate school to earn an advanced degree in psychology, you would be required to specialize in a particular area. Following is a list of some of the specialties: clinical and counselling; experimental; behavioural neuroscience and comparative; developmental; social; personality; health; community; school and educational; industrial and organizational; environmental; cross-cultural; psychology of women; forensic; and sport. Some of these categories are not mutually exclusive. For example, some social psychologists are also experimental psychologists.



Anna Marie Apanovitch obtained a Ph.D. in experimental psychology and today is a senior marketing analyst for Bayer Corporation. Psychology provides excellent training for a wide range of careers, as exemplified by Anna Marie Apanovitch's job. She believes that it is important for students to think about their long-term career options and the skills they will need in performing those jobs and then to work on building up the skills at every opportunity. *Are there some careers in psychology that interest you?*



**FIGURE 1.3** Settings in Which Psychologists Work

More psychologists work in academic settings (34%), such as colleges and universities, than any other. However, clinical (24%) and private practice (22%) settings, both contexts in which many psychologists in the mental health professions work, together make up almost half the total settings.

**Clinical and Counselling Psychology** Clinical and counselling psychology is the most widely practised specialization in psychology. Clinical and counselling psychologists diagnose and treat people with psychological problems (Corey & Corey, 2002; James & Gilliland, 2003). Counselling psychologists sometimes deal with people who have less serious problems. For instance, counselling psychologists may work with students, advising them about personal problems and career planning.

While there are some differences in training between Canada and the U.S. (e.g., regarding dealing with cultural diversity; Bowman, 2000; Hertzsprung & Dobson, 2000), a clinical psychologist typically has a doctoral degree in psychology, which requires three to four years of graduate work and one year of internship in a mental health facility. Clinical psychologists are different from psychiatrists. *Psychiatry* is a branch of medicine practised by physicians with a doctor of medicine (M.D.) degree who subsequently specialize in abnormal behaviour and psychotherapy. Clinical psychologists and psychiatrists alike are interested in improving the lives of people with mental health problems. One important distinction is that psychiatrists can prescribe drugs, whereas clinical psychologists cannot.

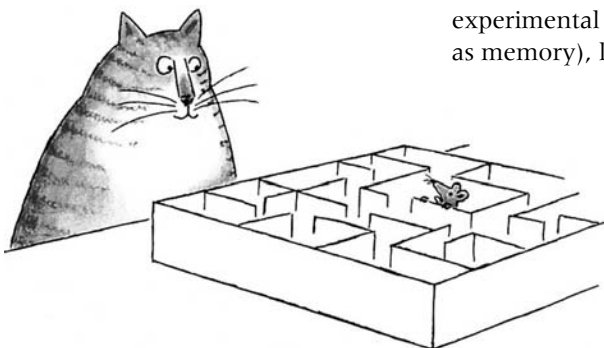
Some clinical psychologists specialize in working with a certain age group. Leslie Greenberg, a clinical psychologist at York University, focuses on emotional aspects of change processes in individual and marital therapy with adults (Greenberg, Korman, & Paivio, 2001; Greenberg & Bolger, 2001). Luis Vargas is a clinical child psychologist at the University of New Mexico Children's Psychiatric Hospital. He is interested in cultural issues that affect the assessment and treatment of children from diverse backgrounds.

**Experimental Psychology** Experimental psychologists use an experimental strategy in their work and often conduct basic research. Among the key aspects of behaviour that experimental psychologists study are sensation and perception, cognitive processes (such as memory), learning, motivation, and emotion (Klein, 2004, 2005; Myers, 2003).

Jim Stevenson, a blind experimental psychologist at NASA, focuses on how sound can be added to graphic displays and the different ways in which we hear patterns. Annabel Cohen, of the University of Prince Edward Island, studies the psychology of music, including how the music helps to create our emotional response to movies (Cohen, 2000, 2001).

### **Behavioural Neuroscience and Comparative Psychology**

Behavioural neuroscientists and comparative psychologists focus on biological processes, especially the brain's role in behaviour (Pinel, 2006; Kolb & Whishaw, 2005; Rains, 2002). Many of these scientists use animals in their research and investigate a range of topics, from how



"Well, you don't look like an experimental psychologist to me."

the brain processes information to the effects of hormones on behaviour. Comparative psychology is a branch of psychology that studies animal behaviour.

Joseph LeDoux, a neuroscientist at New York University, studies how the brain forms, stores, and retrieves memories of life's significant events, especially traumatic ones (LeDoux, 2002; Debiec & Ledoux, 2004). Sandra Witelson, a neuroscientist at McMaster University, has conducted extensive research on communication between the two hemispheres of the brain (e.g., Witelson & Kigar, 1992) and on the difference between the brains of men and women (e.g. Hall, Witelson & others, 2004). A collector of human brains, Witelson has even studied parts of Einstein's brain (Witelson, Kigar, & Harvey, 1999).

**Developmental Psychology** Developmental psychology is concerned with how people become who they are, from conception to death. In particular, developmental psychologists focus on the biological and environmental factors that contribute to human development. For many years the major emphasis of developmentalists was on child development. However, an increasing number of today's developmental psychologists show a strong interest in adult development and aging (Santrock & others, 2005). Their inquiries range across the biological, cognitive, and social domains of life.

Developmental psychologist Sibylle Artz is director of the University of Victoria's School of Child and Youth Care. According to Artz (1998, 2004, 2005), we are seeing more and more young females respond to potent social pressures—to be popular, sexy, and powerful—by turning to violence to achieve those goals. Laura Carstensen, director of the Institute for Gender and Women at Stanford University, has documented that older adults become more selective about the people with whom they interact (Fung & Carstensen, 2004; Löckenhoff & Carstensen, 2004).

**Social Psychology** Social psychology deals with people's social interactions, relationships, social perceptions, and attitudes (Aronson, Wilson, & Akert, 2005). Social psychologists believe we can better understand mind and behaviour if we know something about how people function in groups.

Mark Zanna, a social psychologist at the University of Waterloo, has focused on understanding prejudice (e.g., Zanna, 1994; Jordan, Spencer & Zanna, 2005). Roy Baumeister, of Case Western Reserve University, has studied the importance of self-esteem (Baumeister & others, 2003) and the psychology of hate (Baumeister & Butz, 2005).

**Personality Psychology** Personality psychology focuses on the relatively enduring traits and characteristics of individuals. Personality psychologists study such topics as self-concept, aggression, moral development, gender roles, and inner or outer directedness (Ashcroft, 2003; Feist & Feist, 2006).

William Revelle, a personality psychologist at Northwestern University, studies the biological foundations of personality (Baehr, Revelle, & Eastman, 2000) and how personality is linked to motivation and cognition (Yovel, Revelle & Mineka, 2005). N. C. Higgins, of St. Thomas University, studies how individual differences in people's causal explanation style differences are linked to helping behaviours, retaliatory aggression, risk behaviours and negative life events (Higgins & Shaw, 1999; Higgins & Hay, 2003).

**Health Psychology** Health psychology is a multidimensional approach to health that emphasizes psychological factors, lifestyle, and the nature of the health care delivery system. Many health psychologists study the roles of stress and coping in people's lives (Brannon & Feist, 2004). Health psychologists may work in physical or mental health areas. Some are members of multidisciplinary teams that conduct research or provide clinical services.

James Parker, a health psychologist at Trent University, is especially interested in the relationship of our emotions to our health. He has studied emotional intelligence (Parker, 2000; Parker & others, 2005) and its relationship to academic achievement in high school (Parker, Creque & others, 2004) and in the transition from high school to university (Parker, Summerfeldt & others, 2004). Jeannette Ickovics, of Yale University,



Neuroscientist Sandra Witelson has conducted extensive research on communication between the two hemispheres of the brain.



Sibylle Artz is a developmental psychologist who studies young women who resort to violence.



James Parker is a health psychologist interested in the relationship between emotion and health.

focuses on the behaviours that place adolescent girls at risk for pregnancy and sexually transmitted diseases (Meade & Ickovics, 2005; Kershaw, Ickovics & others, 2004).

**Community Psychology** Community psychology focuses on providing accessible care for people with psychological problems. Community-based mental health centres are one means of delivering such services as outreach programs to people in need, especially those who have traditionally been underserved by mental health professionals (Campbell & Murray, 2004; Murray & others, 2004). Community psychologists view human behaviour in terms of how people adapt to resources and the specific situation. They work to create communities that are more supportive of residents by pinpointing needs, by providing needed services, and by teaching people how to gain access to resources that are already available. Community psychologists are also concerned about *prevention*. They try to prevent mental health problems by identifying high-risk groups and then intervening with appropriate services and by stimulating new opportunities in the community.

Patrick O'Neill is a community psychologist at Acadia University in Nova Scotia. He has focused on cognitive processes in community consultation (O'Neill, 2000) and ethical issues in community psychology (O'Neill, 1999; 2005). South African-born Catharine Campbell is a community psychologist at the London School of Economics. She retains strong research links with the University of KwaZulu-Natal in South Africa where she studies how to strengthen local community responses to the AID/HIV epidemic (Campbell, 2004; Campbell & Foulis, 2004).

**School and Educational Psychology** School and educational psychology is concerned with children's learning and adjustment in school. School psychologists in elementary and secondary school systems test children, make recommendations about educational placement, and work on educational planning teams. Educational psychologists work at colleges and universities, teach classes, and do research on teaching and learning (Santrock & others, 2004).

Donald Saklofske, an educational psychologist at the University of Saskatchewan, is interested in school psychology (Saklofske & others, 2000) and especially psychoeducational assessment (Andrews, Saklofske & Janzen, 2001; Prifitera, Saklofske & Weiss, 2005). Michael Pressley, at Notre Dame University, has found that children's reading improves when they use effective reading strategies, such as monitoring what they have read (Pressley, 2000; Pressley & Hilden, 2005).

**Industrial and Organizational Psychology** Industrial and organizational psychology (I/O psychology) centres on the workplace, both on the workers and on the organizations that employ them. I/O psychology is often partitioned into industrial psychology and organizational psychology. Industrial psychology involves personnel and human resource management. Industrial psychology is increasingly referred to as personnel psychology. Organizational psychology examines the social and group influences of the organization (Goldstein & Ford, 2002; Muchinsky, 2003).

Ramona Bobocel, an I/O psychologist at the University of Waterloo, studies issues concerning justice in the workplace (Bobocel & others, 2002; Peters, van den Bos & Bobocel, 2004). Leaetta Hough, the 2005–6 president of the Society for Industrial and Organizational Psychology, helps businesses develop better resources for their employees. She is interested in the relevance of personality variables in the world of work (Hough & Furnham, 2003).

**Environmental Psychology** Environmental psychology is the study of transactions between people and the physical environment. Environmental psychologists explore the effects of physical settings in most major areas of psychology, including perception, cognition, learning, development, abnormal behaviour, social relations, and others (Gifford, 2002). Topics that an environmental psychologist might study range from how different building and room arrangements influence behaviour to strategies for getting people to reduce behaviour that harms the environment.



I/O psychologist Ramona Bobocel studies the effects of judgments of justice in the workplace on attitudes.

Roberta Feldman is an environmental psychologist whose research and applied interests focus on the design of buildings and communities that people sense are their own (Feldman, 1999). Robert Gifford, of the University of Victoria, also studies environmental psychology (Gifford, 2002), focusing on a variety of topics such as people's beliefs about the effects of lighting (Veitch & Gifford, 1996) and predicting the use of public transportation (Heath & Gifford, 2002).

**Cross-Cultural Psychology** Cross-cultural psychology is the study of culture's role in understanding behaviour, thought, and emotion (Lehman, Chiu, & Schaller, 2004; Schaller & Crandall, 2004). Cross-cultural psychologists compare the nature of psychological processes in different cultures, with a special interest in whether psychological phenomena are universal or culture-specific. The International Association for Cross-Cultural Psychology promotes research on cross-cultural comparisons and awareness of culture's role in psychology.

Harry Triandis is an emeritus cross-cultural psychologist at the University of Illinois. His research reveals that North Americans are oriented more toward the individual and are more competitive with other people than many people from Asian countries, who are oriented more toward the needs of a group (Triandis, 2001, 2005). Sampo Paunonen, of the University of Western Ontario, is interested in both nonverbal (Paunonen & Ashton, 2002) and verbal (Paunonen & others, 2003) measures of personality suitable for cross-cultural research.

**Psychology of Women** The psychology of women emphasizes the importance of promoting research on women, and the study of women. This field emphasizes the importance of integrating information about women with current psychological knowledge and beliefs and applying the information to society and its institutions (Worell, 2002). The Section on Women and Psychology (SWAP), now the second-largest section of the Canadian Psychological Association, was formed in 1976.

Cannie Stark, of the University of Regina, has studied women's issues throughout her career. She has focused on the role of women in Canadian psychology (Stark, 2000) and sexism in research (Stark-Adamec, 1992). Rosalind Barnett, of the Murray Research Center of Radcliffe College, is especially interested in how work and family demands and challenges affect the lives of women (Barnett, 2002, 2004, 2005).

**Forensic Psychology** Forensic psychology is the field of psychology that applies psychological concepts to the legal system (Wrightsmann & others, 2002; Ogloff, 2004). Social and cognitive psychologists increasingly conduct research on topics related to psychology and law. Forensic psychologists are hired by legal teams to provide input about many aspects of a trial. For example, forensic psychologists were members of the legal teams in the trials of O. J. Simpson and Timothy McVeigh.

Don Dutton is a forensic psychologist at the University of British Columbia. He conducts research on family violence (Dutton, 1998; Winters, Clift, & Dutton, 2004) and counsels intimate abusers, who are not always men (Nichols & Dutton, 2001). He has served as an expert witness in trials involving intimate violence, including testimony for the prosecution in the O. J. Simpson trial.

**Sport Psychology** Sport psychology is the field of psychology that applies psychology's principles to improving sport performance and enjoying sport participation (LeUnes & Nation, 2002). Sport psychology is a relatively new field, but it is rapidly gaining acceptance. At recent Olympics, psychologists worked with athletes and coaches from Canada, the U.S., and many other countries.

The research of Diane Ste-Marie, of the University of Ottawa, on biases in sport judgments (Ste-Marie, 1996; Findley & Ste-Marie, 2004), is especially relevant in light of the judging scandal at the 2002 Winter Olympics, which resulted in the awarding of extra gold medals to Canadian figure skaters Jamie Salé and David Pelletier.

To reflect on whether a career in psychology might be in your future, see the Personal Reflections box.



Cannie Stark has studied women's issues throughout her career in psychology.



Sport psychologists are likely to play a role in improving the quality of judging in figure skating, after the judging scandal at the 2002 Winter Olympics involving Canadians Jamie Salé and David Pelletier.

## Is Psychology in Your Future?

### Instructions

Students who are successful as psychology majors have a profile that is related to the questions below. Answer true or false to each item.

	True	False
1. I often think about what makes people do what they do.	_____	_____
2. I like reading about new findings that scientists have discovered while doing behavioural research.	_____	_____
3. I am often skeptical when someone tries to persuade me about behavioural claims, unless there is evidence to back up the claim.	_____	_____
4. I like the prospect of measuring behaviour and doing statistics to determine meaningful differences.	_____	_____
5. I can usually come up with multiple explanations to account for behaviour.	_____	_____
6. I think I could come up with ideas to research to help explain behaviours I am curious about.	_____	_____
7. I am often approached by others who want me to listen to their problems and share my ideas about what to do.	_____	_____
8. I don't get especially frustrated if I can't get answers to my questions.	_____	_____
9. I am usually careful with details.	_____	_____
10. I enjoy writing and speaking about things I am learning.	_____	_____
11. I like to solve puzzles.	_____	_____
12. I feel comfortable that psychology can provide me with an education that will lead to a good job.	_____	_____

### Scoring and Interpretation

If you answered "true" to a majority of the items, psychology is a major that likely matches up well with your interests. Although the items are not a perfect predictor of whether you will enjoy majoring in and pursuing a career in psychology, they can give you an indication of whether you might benefit from finding out more about what psychologists do and what is involved in becoming a psychologist. Your psychology professor or a career counsellor at your university can likely inform you about the best way to pursue a career in psychology.

### > reflect and review

#### 4 Evaluate careers and areas of specialization in psychology.

- Describe the kinds of career opportunities that are available to people with an undergraduate degree in psychology.
- List and discuss the areas of specialization in psychology.

*Think of a career other than psychology that you might enter. In what ways might studying psychology be useful in that career?*

## 5 HOW TO GET THE MOST OUT OF PSYCHOLOGY

Thinking  
Critically

Good Study  
Habits

This Textbook's  
Pedagogical  
Tools

### **What skills and study habits can help me in this course?**

Very likely you are taking other courses besides psychology. You will have a lot of reading and studying to do, and you will probably have to take a number of tests. What are some good strategies for succeeding in this and other courses?

## Thinking Critically

Thinking critically is an important aspect of psychology, as it is in all disciplines. The ability to critically evaluate information is essential to all areas of daily life (Halpern, 2002, 2003). For example, if you were planning to buy a car, you might want to collect information about different makes and models and evaluate their features and costs before deciding which one to test-drive. This would be an exercise in critical thinking.

Critical thinking is not a spectator sport (Halpern, 1998). You need to regularly practise your critical thinking skills on a wide variety of problems to keep them sharp. Let's practise them.

### What Is Critical Thinking?

People don't change.

Love is blind.

Birds of a feather flock together.

Communicating with spirits is possible.

Such statements about human nature spark the psychologist's curiosity and skepticism, which is the tendency to doubt the validity of claims in the absence of evidence. Psychologists try to sort fact from fancy by critically questioning the nature of mind and behaviour.

What does it mean to be a critical thinker? Understanding the complex nature of mind and behaviour requires **critical thinking**, the process of thinking reflectively and productively and evaluating the evidence. Thinking critically means asking yourself how you know something. Too often we have a tendency to recite, define, describe, state, and list rather than analyze, infer, connect, synthesize, criticize, create, evaluate, think, and rethink (Brooks & Brooks, 2001). Following is a brief sampling of some thinking strategies that can stimulate you to think reflectively and productively:

- *Be open-minded.* Explore options and avoid narrow thinking.
- *Be intellectually curious.* Wonder, probe, question, and inquire. Also be alert for problems and inconsistencies.
- *Be intellectually careful.* Check for inaccuracies and errors, be precise, and be organized.
- *Look for multiple determinants of behaviour.* People have a tendency to explain things as having a single cause. After all, that's a lot easier than having to analyze the complexity of, say, mind and behaviour and come up with multiple explanations. However, one of psychology's important lessons is that mind and behaviour have multiple determinants. For example, if someone asked what causes a person to be a good critical thinker, the person might respond, "Being open-minded." Having an open mind is one of critical thinking's multiple dimensions, but it does not cause critical thinking. When another person is asked what causes critical thinking, the individual might respond, "Practice." Yet another person might say, "An inquiring, critical-thinking mentor." Like all aspects of mind and behaviour, critical thinking has many dimensions.
- *Think like a scientist.* Neil Agnew and Sandra Pyke (1993) stress that thinking like a scientist about human minds and behaviours can be learned. Scientific thinkers examine the available evidence about some aspect of mind and behaviour, evaluate how strongly the data (information) supports their hunches, analyze disconfirming evidence, and carefully consider whether they have explored all of the possible factors and explanations (Agnew & Pyke, 1993). It is important to underscore how critical it is to look for biases in the way people think and behave. For example, a person who is wildly enthusiastic about the remarkable effects of exercise on health when responding to survey questions about health awareness might sell exercise videos on the side. In the discussion of the scientific method in the next chapter, we explore more systematically how to think like a scientist. And in the next section, you will read about the healthy skepticism of

**critical thinking** The process of thinking reflectively and productively, as well as evaluating evidence.



scientific thinkers and how they require sound evidence before accepting information as valid.

**Maintaining a Healthy Skepticism** The failure to think critically ranges from taking advice based on horoscopes to believing that eating a ground-up portion of a tiger’s sexual organ will increase the human male’s sexual potency. Critical thinking expert Diane Halpern (1998, 2003) explained why she is concerned that so many people fail to engage in critical thinking. Approximately 75 percent of North Americans read their horoscope, and many of them believe that it is personally meant for them (Lister, 1992). Some phone their psychics and pay exorbitant fees for advice that ranges from how to invest their money to whether or not a loved one should be disconnected from life-support systems. They spend large sums of money on remedies for which there is no evidence of effectiveness or safety. In a survey of university students, most students believed in at least one of the following (Messer & Griggs, 1989):

- channelling (the ability to enter a trance state and communicate with someone in another place and time, even centuries ago)
- clairvoyance (the ability to perceive remote events that are not visible to normal sight)
- precognition (“knowing” events before they occur)
- telepathy (the extrasensory transfer of thought from one person to another)
- psychic healing (performing miracle cures instantaneously through contact with a higher spiritual being)
- psychic surgery (a brand of faith healing in which sleight of hand is relied on to achieve a “miracle,” such as removing dead or diseased tissue)
- crystal power (use of quartz crystals for healing)
- psychokinesis (being able to move objects without actually touching them)
- astral travel
- levitation
- the Bermuda Triangle mystery
- unidentified flying objects (UFOs)
- plant consciousness
- auras
- ghosts

If you believe in any of these phenomena, psychologists urge you to be more skeptical. Remember that thinking like a scientist means that you demand to see the evidence for such phenomena as channelling, crystal power, and plant consciousness. There is no scientific evidence for the existence of any of the previously listed phenomena, only personal anecdotes and coincidences—and those do not meet science’s criteria of objectivity and public verifiability.

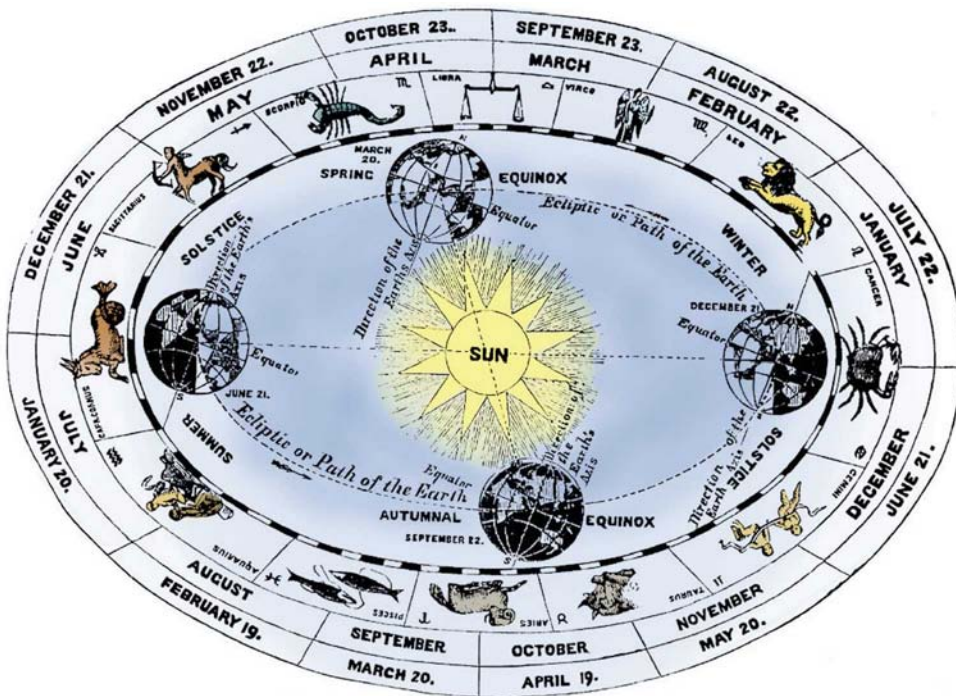
When you think like a scientist, you will be skeptical of astrology, channelling, crystal power, and anything else that claims access to wondrous powers and supernatural forces (Ward & Grashial, 1995). If something sounds too good to be true, think through the claims logically and demand to see the evidence. A failure to think critically and to demand scientific evidence often underlie our purchase and use of highly touted, ineffective health care products (Halpern, 1998, 2003). For example, there is a widespread belief around the world today that a man who ingests the ground penis of a tiger will have more sexual potency. This belief is so pervasive that it has resulted in rare wild tigers and other endangered species being poached. Males who believe that this works think like this: Tigers (presumably) have a great sex life; thus eating a tiger’s sexual organ will improve my sex life. You should be able to see what is wrong with this kind of thinking, especially when there is no evidence to support it.



*Why should you be skeptical when you hear that eating a ground-up penis of a tiger will increase the human male’s sexual potency?*

**Thinking Critically About Controversies** As we indicated earlier in the chapter, psychology is full of controversies. How might psychology benefit from these controversies? Psychology has advanced as a field because it does not accept simple explanations and because psychologists do not always agree with each other about why mind

*Why does the science of psychology urge you to be skeptical of astrology?*



and behaviour work the way they do: We have reached a more accurate understanding of mind and behaviour *because* psychology fosters controversies and *because* psychologists think deeply and reflectively and examine the evidence on both sides.

What are some of psychology's controversies? Here is a brief sample:

- Are memories of sexual abuse real or imagined?
- Can intelligence be increased?
- Is alcoholism a biologically based disease or a learned behaviour?
- Is it better to treat depression with drugs or with psychotherapy?

Controversies are usually not totally resolved on one side or the other. Often the resolution comes down to a matter of degree. For example, some cases of sexual abuse may be imagined, whereas others are real; and certain aspects of abuse are more likely to be imagined than others.

In this book we call your attention to a number of controversies. Because it is important for you to think critically about controversies, each chapter has a Critical Reflections box that presents a controversial issue in contemporary psychology.

## Good Study Habits

Mastering good study habits will help you not only in psychology and in school but also in your career and personal life. Here we focus on five important strategies for success: time management, study environment, reading effectiveness, attentiveness in class, and test preparation.

**Plan and Manage Your Time Effectively** Learning takes time. You will benefit enormously in this course and others if you become a great time manager. If you waste too much time, for instance, you will find yourself poorly prepared the night before an important exam. Procrastination is one of the most important ways in which students can end up wasting time (Schouwenburg & others, 2004; Blunt & Pychyl, 2005). If you manage time well, you will have time to relax before exams and other deadlines. Time management can help you to be more productive and less stressed, so you have a better balance between work and play.

You might find it helpful to fill out the dates for the tests in your courses in a term calendar. Many students benefit from keeping a weekly calendar to see how they are

**FIGURE 1.4****Example of a To-Do List**

<b>To Do</b>		
<b>The Most Important:</b>		
1. Study for Psychology Test		
<b>Next Two:</b>		
2. Go to English and History classes		
3. <u>Make appointment to see advisor</u>		
Task	Time	Done
Study for psychology test	Early morn., night	
Call home	Morning	
Go to English class	Morning	
Buy test book	Morning	
Call Ann about test	Morning	
Make advisor appt.	Afternoon	
Go to history class	Afternoon	
Do exercise workout	Afternoon	

allocating their time. Students who consistently get A's in courses often report that they study 2 to 3 hours outside class for every hour they are in class (Santrock & Halonen, 2006). Thus, if you are in class 15 hours a week and you want to get A's, a rule of thumb is to study 30 to 45 hours a week outside of class.

A good strategy for managing your time is to space out your study in a particular course rather than cramming it all into one or two study sessions just before the test. On a weekly schedule, block out at least 1 hour a day for 6 days to read this book and study your notes for this course. Then you will be better prepared when the time comes for each test, and you won't have to cram.

It is a good idea to plan not only for the term and the week but also for tomorrow. Great time managers identify the most important things to do each day and allocate enough time to get them done. Figuring out what is most important involves setting priorities. An effective way to set priorities is to create a manageable to-do list. Set a goal of making a to-do list for the next day every night or, at the latest, early in the morning. Figure 1.4 shows one student's to-do list.

**Choose the Most Effective Study Environment** Too many distractions can keep you from studying or remembering what you have studied. Select your place of study carefully, paying close attention to the features of the environment that will let you do your best work.

Some students find that their studying is more effective when they do it in the same place. Ideally, the area should be well lighted, without glare, and should be a comfortable temperature. A quiet location will let you concentrate much better than a noisy one. Noise is a major distraction to effective study. Turn off the stereo, radio, or TV while you are studying to minimize distraction.

**Maximize Your Reading Effectiveness** Studying involves a lot of reading, from course outlines to textbooks to research articles. Many students approach the challenge of reading as just so many pages to plow through. But there is a difference between reading to read (to complete the required number of pages) and reading to learn. Reading to learn improves your understanding if you approach your reading as a conversation the author is having with you, about the requirements for passing your course, about the concepts of psychology, or about a specific piece of research. As in any effective conversation, you must pay attention, figure out how the parts of the conversation

fit together, and make some judgments as you go about understanding the author's intent.

The following strategies can help you maximize your ability to understand and retain what you read (we offer more detailed strategies for using this textbook in the next section, *This Textbook's Pedagogical Tools*):

- **Preview and plan.** Look at the number of pages you have to read and plan how to read the assignment. If the task is very long, determine at what points it would be appropriate to take breaks. For example, we have divided each chapter of this textbook into three to five main sections, so a good time to take a break in your reading might be after you have read one or two main sections.
- **Survey.** Spend a short time beforehand skimming the reading assignment and determine what main ideas will be covered. Look at any main headings. When you skim, you begin to build a foundation for the main ideas of the reading, even if it is a course outline or an exam.
- **Read to comprehend.** There is no easy way around the effort and hard work involved in understanding what you read. However, there are some things you can do to increase your understanding of what you read:
  1. Pay attention to the sections of what you are reading as meaningful units. Take one section at a time. Read each one until you are satisfied that you know the ideas.
  2. Don't skip over what you don't understand. On exams, take time to make sure you understand the question before writing out an answer. We find that students often fail to earn full grades on examinations, not because they don't know the material but because they misread the questions and wrote down an inappropriate answer. When it is not an exam and it is appropriate, consider finding a classmate who is willing to discuss the challenging ideas.
  3. Work on your reading speed. Practise taking in more words as your eyes sweep the line of print. Don't mouth the words as you read—that only slows you down.
- **Read to retain.** Most students need to read reading assignments more than once if they are going to learn the material. Thinking about personal examples that illustrate concepts is a good memory aid. Periodically ask yourself the meaning of what you have been reading.
- **Review.** After you have used the aforementioned strategies, you may need to review the material you have read several times. This is a normal part of reading for retention. Just because you have read a chapter once, don't think that you will be able to remember everything in it that is important. At the end of each major section in this book, for example, you will find review questions and, at the end of the chapter, a summary of the chapter's main ideas for an overall review.

**Be a Good Listener and Concentrate in Class** You need to do more than just memorize or passively absorb new information in class. To do well in most classes, including this one, you need to go to class, listen carefully, and take good notes.

A good strategy is to treat each and every class hour as an important learning experience. To carry out this strategy, you obviously have to be there. It also helps to prepare for the class by reading about the topic(s) that will be covered prior to the class.

In preparing for a lecture, motivate yourself by telling yourself that it is important for you to stay alert and listen carefully. Make sure you get sufficient sleep the night before so that you will be able to maximize your learning in class the next day. Many students find that a regular exercise program increases their alertness and ability to concentrate in class and when they are studying.

Take notes in class, but don't try to write down everything the instructor says. As you listen to a lecture, focus on the main ideas and take notes about them. If you miss an idea, get together later with one or more students in the class to find out what the idea was. Many students find it helpful to review their notes right after class, because the material in the lecture will be fresher in their minds than if they wait several days or more to review them.

**Prepare Effectively for the Test** In most cases, your grade in a course will depend on how well you do on the exams given periodically during the term. At the beginning of the term, find out what kinds of tests your instructor will be giving. Will they be all multiple-choice items? Will there be essay questions? Will the exams be a mixture of these or include other types of items, such as true-false?

A good strategy is to complete all of your textbook reading well before the exam. All of your classroom notes should be in order so you can easily review them. If you have been studying on a regular basis, you should be in a good position to consolidate what you have learned for the test.

Some students find it helpful to develop their own questions about what they think will be covered on the test and practise answering them. You may also find it helpful to study in a small group with other students in the class, who may be able to contribute information that you missed or did not adequately understand.

When you take a test, you will have to remember information. If you have practised good study skills day after day and week after week leading up to the test, your ability to remember information will be enhanced when you take the test. In chapter 8, we discuss a number of strategies for remembering effectively.

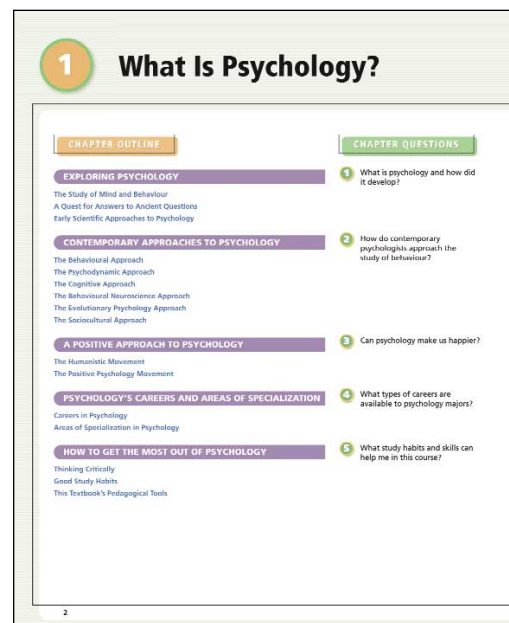
Getting the most out of psychology involves remembering ideas and concepts. It also involves thinking critically about these ideas and concepts.

## This Textbook's Pedagogical Tools

You may have noticed that we already talked about this textbook's **pedagogical tools** in both the student and instructor prefaces prior to this chapter. Studying the student preface will give you an understanding of how to learn more effectively from this book. We are briefly reviewing these tools to underscore their importance. To reiterate, your understanding of, and memory for, what you read depends on the active, constructive processing effort you put into it. A good textbook supports your effort by presenting the content you need to learn in the context of helpful pedagogical tools. Remember, a *textbook = content + pedagogy*.

We strongly recommend that you make use of the pedagogical tools we have used to structure this textbook. If you do so, your understanding of the textbook content will be enhanced, giving you a more elaborated understanding of psychology and a better memory for what you have learned. We are so confident about these principles that we also invite you to apply them to all your text-based learning. We know it is extra work but believe that the benefits far outweigh the costs.

**FIGURE 1.5**  
Chapter Opening Pedagogical Tools



**pedagogical tools** Activities that aid in the active construction of knowledge or skill.

**Integrated Pedagogical Tools** The pedagogical tools in this textbook form an integrated system that can produce powerful results for you when approached through the PQ4R system. At the beginning of each chapter, you will see a Chapter Preview that introduces you to the main themes of the chapter and a Chapter Outline, a table of contents for the chapter. You will also see three to six Chapter Questions, one for each chapter section (see figure 1.5).

Following each main heading in the chapter, you will again come across the relevant chapter question and will see a map that includes the main heading and subheadings for that particular section (see figure 1.6a). This provides a visual preview of what you will be reading in the section.

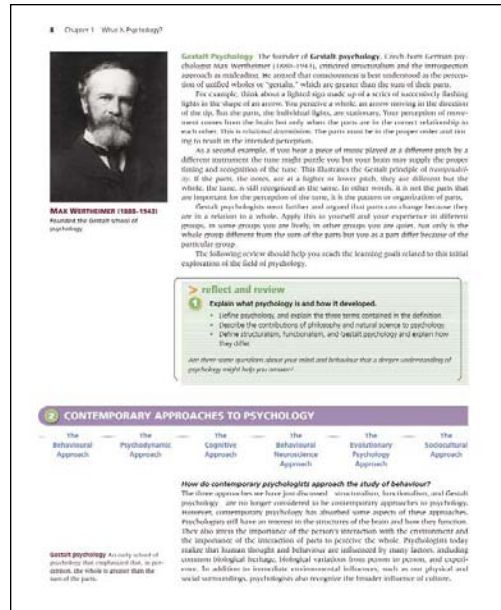


FIGURE 1.6 Chapter Section Pedagogical Tools

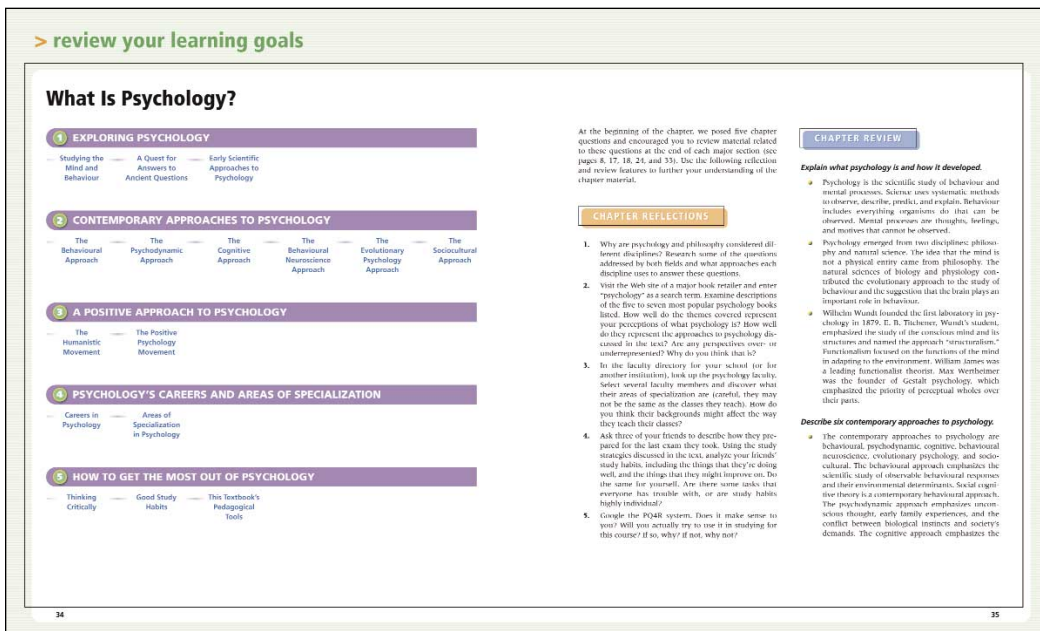


FIGURE 1.7 Chapter Ending Pedagogical Tools

At the end of each major section, you will come to the heading Reflect and Review (see figure 1.6b). The first part presents further elaborative reflections on the material you just read and the second part restates the section's chapter question and asks you to review each of the main topics in the section. The bulleted review statements are correlated with the map at the beginning of the section.

Finally, at the end of the chapter, a map of the entire chapter gives you a visual reminder of the main topics (see figure 1.7). Here, a section called Chapter Review restates the chapter questions and summarizes the material related to each question. This information is provided in bulleted form and matches up in a one-to-one fashion with the bulleted statements in each of the chapter's section reviews. Identifying the core concepts in this textbook is also easier through the Core Terms, which are listed and page-referenced at the end of the chapter. These terms are also bold-faced and defined in the margin when they are first presented. In the Glossary at the end of the book you will find definitions for all core terms, along with a reference to the page on which the term is introduced (see figure 1.7).

Finally, the book offers several additional tools to deepen your thinking about psychology. The Critical Reflections boxes elaborate on a particular contemporary controversy in psychology. We urge that you always ask if what you are reading is relevant to your own life, an activity we encourage with the Personal Reflections Boxes. Further, both the Reflect and Review and the Chapter Reflections tools encourage you to further elaborate what you have just read. Finally, in the margins of the book you will see notes directing you to other resources can also help you reflect and review your growing understanding of psychology. These resources include the Student Study Guide and the Online Learning Centre for the book. These resources include quizzes, Internet activities, and many other activities. A general reminder about the additional available study resources also appears at the end of the chapter.

**Systematic Study Through PQ4R** We have chosen to present these pedagogical tools as a variation of the PQ4R (Preview, Question, Read, Reflect, Recite, Review) system with which you may already be familiar (Thomas & Robinson, 1972). Systems like this (e.g. PQ3R, SQ4R) are very useful for deepening your understanding of, and improving your memory for textual material for several reasons.

First, the *Preview* and *Question* steps serve as **advance organizers** (Ausubel, 1968). Most students find that reading an unfamiliar passage is easier and results in better comprehension and memory when they have some advance idea about what they are about to read (Ausubel, 1978).

Second, the *Reflect* and *Recite* steps serve to encourage elaboration, which refers to how extensively information has been processed (see Chapter 8). The more extensive and varied your processing, the better. Students' use of elaboration has been linked to their academic success (e.g., Gadzella, 1995). *Self-reference* is an especially powerful form of elaboration (Rogers, Kuiper, and Kirker, 1977). Throughout this textbook, we will often invite you to relate the content to your own life experiences.

Third, if you follow this system, including repeating the *Review* step, you will be engaging in distributed practice, resulting in a **spacing effect**. In other words, the PQ4R system encourages a more efficient distribution of study time, resulting in better understanding and memory (Reynolds & Glaser, 1964).

**Preview.** We recommend that you start each chapter by working through the first two pages of the chapter. You will find a Chapter Preview, introducing you to the main themes of the chapter, and a Chapter Outline, a table of contents for the chapter. These are advance organizers that, like a map, give you a good idea of what the chapter will cover (see figure 1.5).

**Question.** Similarly, before beginning to read the chapter, we recommend that you think about the Chapter Questions that encapsulate the chapter's main themes and underscore the most important ideas in the chapter (see figure 1.5). Also, feel free to formulate any additional questions you would be interested in answering. Reading with some questions already in mind, especially if you have formulated those questions yourself is an especially effective advance organizer (Frase, 1975).

**Read.** You are now better prepared to understand what you are about to read. As you read the chapter, periodically check to see if it fits with the expectations you developed from your initial preview and answers any of your questions from the question step. A good time to do this is between chapter sections. Each section begins with a restatement of the preview information relevant to that section and ends with some reflection and review information (see figure 1.6). We encourage you to take notes, especially in your own words. But avoid underlining as it is a much less active form of processing.

**Reflect.** Both while you are reading and after finishing a section, we encourage you to reflect on what you have read to elaborate your understanding. The Critical Reflections boxes elaborate on a particular contemporary controversy in psychology. We urge that you always ask if what you are reading is relevant to your own life, an activity we

**advance organizer** A reference frame for encountering new information that results in better comprehension and memory for textual material.

**spacing effect** The finding that for a given amount of study time, it is better to distribute studying across time than to mass it together.

encourage with the Personal Reflections Boxes. Finally, both the Reflect and Review and the Chapter Reflections tools encourage you to further elaborate what you have just read.

**Recite.** After you have read and reflected on a chapter or chapter section, we recommend that you recite what you have learned. This is a good time to put together your study notes for this material. This activity helps you consolidate and further elaborate your understanding. Try to minimize rote repetition in favour of rewording, explaining the concepts to other students, and inventing mnemonics (see Chapter 8).

**Review.** Finally, we urge you to revisit your notes repeatedly throughout the term. Chapter Reviews are useful here (see figure 1.7). Keep in mind that, although the Chapter Reviews offer an organized, systematic review of the entire chapter, they are not a substitute for reading and studying the chapter. Use them, rather, as guides to help you organize your study of the chapters. Also, consider repeatedly recalling the material, self-testing, and working with study partners. As we mentioned previously, reviewing helps to distribute your practice, a much more efficient study strategy.

### > reflect and review

5

#### Apply some strategies that will help you succeed in psychology.

- Describe the nature of critical thinking.
- Discuss some good study habits.
- Identify the study tools in this book.

*Why do you think so many people believe in astrology?*

*What good study habits do you already use? What could you do to improve them?*



# > review your learning goals

## What Is Psychology?

### 1 EXPLORING PSYCHOLOGY

Studying the  
Mind and  
Behaviour

A Quest for  
Answers to  
Ancient Questions

Early Scientific  
Approaches to  
Psychology

### 2 CONTEMPORARY APPROACHES TO PSYCHOLOGY

The  
Behavioural  
Approach

The  
Psychodynamic  
Approach

The  
Cognitive  
Approach

The  
Behavioural  
Neuroscience  
Approach

The  
Evolutionary  
Psychology  
Approach

The  
Sociocultural  
Approach

### 3 A POSITIVE APPROACH TO PSYCHOLOGY

The  
Humanistic  
Movement

The Positive  
Psychology  
Movement

### 4 PSYCHOLOGY'S CAREERS AND AREAS OF SPECIALIZATION

Careers in  
Psychology

Areas of  
Specialization  
in Psychology

### 5 HOW TO GET THE MOST OUT OF PSYCHOLOGY

Thinking  
Critically

Good Study  
Habits

This Textbook's  
Pedagogical  
Tools

At the beginning of the chapter, we posed five chapter questions and encouraged you to review material related to these questions at the end of each major section (see pages 8, 17, 18, 24, and 33). Use the following reflection and review features to further your understanding of the chapter material.

## CHAPTER REFLECTIONS

1. Why are psychology and philosophy considered different disciplines? Research some of the questions addressed by both fields and what approaches each discipline uses to answer these questions.
2. Visit the Web site of a major book retailer and enter “psychology” as a search term. Examine descriptions of the five to seven most popular psychology books listed. How well do the themes covered represent your perceptions of what psychology is? How well do they represent the approaches to psychology discussed in the text? Are any perspectives over- or underrepresented? Why do you think that is?
3. In the faculty directory for your school (or for another institution), look up the psychology faculty. Select several faculty members and discover what their areas of specialization are (careful, they may not be the same as the classes they teach). How do you think their backgrounds might affect the way they teach their classes?
4. Ask three of your friends to describe how they prepared for the last exam they took. Using the study strategies discussed in the text, analyze your friends’ study habits, including the things that they’re doing well, and the things that they might improve on. Do the same for yourself. Are there some tasks that everyone has trouble with, or are study habits highly individual?
5. Google the PQ4R system. Does it make sense to you? Will you actually try to use it in studying for this course? If so, why? If not, why not?

## CHAPTER REVIEW

### ***Explain what psychology is and how it developed.***

- Psychology is the scientific study of behaviour and mental processes. Science uses systematic methods to observe, describe, predict, and explain. Behaviour includes everything organisms do that can be observed. Mental processes are thoughts, feelings, and motives that cannot be observed.
- Psychology emerged from two disciplines: philosophy and natural science. The idea that the mind is not a physical entity came from philosophy. The natural sciences of biology and physiology contributed the evolutionary approach to the study of behaviour and the suggestion that the brain plays an important role in behaviour.
- Wilhelm Wundt founded the first laboratory in psychology in 1879. E. B. Titchener, Wundt’s student, emphasized the study of the conscious mind and its structures and named the approach “structuralism.” Functionalism focused on the functions of the mind in adapting to the environment. William James was a leading functionalist theorist. Max Wertheimer was the founder of Gestalt psychology, which emphasized the priority of perceptual wholes over their parts.

### ***Describe six contemporary approaches to psychology.***

- The contemporary approaches to psychology are behavioural, psychodynamic, cognitive, behavioural neuroscience, evolutionary psychology, and socio-cultural. The behavioural approach emphasizes the scientific study of observable behavioural responses and their environmental determinants. Social cognitive theory is a contemporary behavioural approach. The psychodynamic approach emphasizes unconscious thought, early family experiences, and the conflict between biological instincts and society’s demands. The cognitive approach emphasizes the

mental processes involved in knowing. The behavioural neuroscience approach emphasizes that the brain and nervous system are central to understanding behaviour. The evolutionary psychology approach stresses the importance of adaptation, reproduction, and “survival of the fittest.” The socio-cultural approach focuses on the social and cultural determinants of behaviour.

- John B. Watson and B. F. Skinner were important early behaviourists. Sigmund Freud was the founding father of the psychodynamic approach.
- Psychodynamic, cognitive, behavioural neuroscience, and evolutionary psychology approaches emphasize what is going on inside a person. Behavioural and sociocultural approaches focus on the outside environment.

***Describe two movements that reflect a positive approach to psychology.***

- The humanistic movement emphasizes a person’s capacity for positive growth, freedom to choose a destiny, and positive qualities.
- The positive psychology movement is a recent one. It argues that psychology has been too negative and needs to focus more on the positive aspects of people, such as their optimism, creativity, and civic values.

***Evaluate careers and areas of specialization in psychology.***

- Majoring in psychology can open up many career opportunities. Careers range from conducting therapy with people who have mental problems to

teaching and conducting research at a university to advertising and public relations.

- Areas of specialization in psychology include clinical and counselling psychology, experimental psychology, behavioural neuroscience and comparative psychology, developmental psychology, social psychology, personality psychology, health psychology, community psychology, school and educational psychology, industrial and organizational psychology, environmental psychology, cross-cultural psychology, the psychology of women, forensic psychology, and sport psychology.

***Apply some strategies that will help you succeed in psychology.***

- Critical thinking involves thinking reflectively and productively and evaluating the evidence. It is important to maintain a healthy skepticism about anything that appears to be magical and wondrous. Demand to see the logical evidence before believing in something involving psychology. Psychology is full of controversies, and it is important to think critically about these controversies. Most controversies are not completely resolved on one side or the other.
- Developing good study habits includes planning and time management, choosing a conducive study environment, maximizing reading effectiveness, being a good listener and concentrating in class, and preparing effectively for tests.
- This book’s pedagogical tools include a chapter questions and chapter map system, questions to encourage reflection, core terms and the PQ4R system.

## CONNECTIONS



Online  
**LearningCentre**  
with POWERWEB



For extra help in mastering the material in this chapter, see the integrator, review sections, practice quizzes, and other resources in the Student Study Guide and at the Online Learning Centre ([www.mcgrawhill.ca/college/santrock](http://www.mcgrawhill.ca/college/santrock)).

## CORE TERMS

folk psychology, p. 4  
psychology, p. 5  
science, p. 5  
behaviour, p. 5  
mental processes, p. 5  
natural selection, p. 6  
structuralism, p. 7  
functionalism, p. 7  
Gestalt psychology, p. 8

behavioural approach, p. 9  
social cognitive theory, p. 10  
psychodynamic approach, p. 11  
cognitive approach, p. 11  
behavioural neuroscience approach,  
p. 12  
evolutionary psychology approach,  
p. 12  
sociocultural approach, p. 14

humanistic movement, p. 17  
positive psychology movement,  
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critical thinking, p. 25  
pedagogical tools, p. 30  
advance organizer, p. 32  
spacing effect, p. 32