A DAY IN THE LIFE

September 20

The alarm shook Linda out of a dream. Shafts of light pierced the window blinds in her room. She shut off the alarm, rose, and raised the blinds. A world of color splashed in. As she stifled a morning sneeze, Linda recalled that yesterday, in psychology class, her teacher had challenged the students to touch their noses with their eyes closed. Linda had succeeded, but Todd had jokingly poked himself in the eye. She remembered the incident and laughed. Her laughter stopped when she remembered that she was going to have a math test today. Then she relaxed. "No sweat; I'm really good at math," she thought. And after school, she had plans to meet some friends. "I wonder if Marc will be there," she pondered. (Linda thought Marc was very attractive.) She reflected sadly that Nick would not be there. Nick had a drug problem, and his parents had convinced him to go to a treatment center for help. Linda sighed to herself, then turned away from the window and went to the kitchen for breakfast. She was hungry.

Sleeping and waking, our perceptions of the worlds within and around us, memory, emotion, attractions between people—these are some of the topics of interest to psychologists. The kinds of questions that psychologists might ask about Linda's thoughts and behavior this morning include the following:

- How did the alarm wake Linda? What happened inside her brain that woke her?
- Linda raised the blinds and her morning became alive with color. How are we able to sense the world outside? Why do most of us see colors while some of us cannot see them?
- Linda touched her nose when her eyes were closed. What body senses enable us to know where our body parts are and what we are doing when our eyes are closed?
- Linda is good at math. Why do some students do well in some high school classes but struggle in others? How are factors such as motivation and intelligence involved?
- Linda was looking forward to meeting her friends. Why do most of us seek friendship? How is our behavior influenced by other people?
- Linda thought Marc was attractive. What is attraction? What is love? Why do we find some people attractive and others less so?
- Nick was involved with drugs. How do drugs affect people psychologically? In what way are drugs harmful?
- Linda was hungry for breakfast. What makes us hungry? Why are some people overweight and others dangerously thin?

Psychologists are so intrigued by these types of questions that they make the attempt to answer them their life's work.

Key Terms

- psychology
- behavior
- cognitive activity theory
- basic research
- introspection
- structuralism
- functionalism
- behaviorism
- Gestalt psychology
- psychoanalysis
- biological perspective
- cognitive perspective
- humanistic perspective
- psychoanalytic perspective
- learning perspective
- social-learning theory
- sociocultural perspective

WHAT IS PSYCHOLOGY? 3
TRUTH OR FICTION? Read the following statements about psychology. Do you think they are true or false? You will learn whether each statement is true or false as you read the chapter.

- Psychologists have very little interest in studying people's emotions.
- A book on psychology, with content similar to that of this textbook, was written by Aristotle more than 2,000 years ago.
- In the Middle Ages, some innocent people were drowned as a way of proving that they were not possessed by the devil.
- Some psychologists view our strategies for solving problems as mental programs operated by our very personal computers—our brains.
- Sigmund Freud's theories continue to influence psychology today.

TRUTH It is not true that psychologists have very little interest in studying people's emotions. Psychologists know that emotions are important because they can influence both behavior and mental processes.

Why Study Psychology?

What do you hope to learn from the study of psychology? Perhaps you hope to gain a better understanding of why people act as they do, or more specifically, why you act as you do. Or perhaps you want to learn more about your thoughts and feelings; in doing so, you might discover more effective ways to handle, or help others handle, the stresses of daily life. Whether your reason is general or specific, the study of psychology will give you new ways to look at and interpret your world and the people who inhabit it.

Behavior and Mental Processes

Psychology is the scientific study of behavior and mental processes. Behavior is any action that other people can observe or measure. For example, Linda awakened, rose from her bed, raised the blinds, and laughed. All of these activities are behaviors. All are observable by other people.

Behavior also includes activities such as walking and talking, pressing a switch, turning left or right, sleeping, eating, and drinking. Behavior even includes automatic body functions such as heart rate, blood pressure, digestion, and brain activity. Behavior can be measured by simple observation or by laboratory instruments. Brain activity, for example, can be measured by scientific instruments such as the electroencephalograph (EEG).

Linda also engaged in private mental processes, or cognitive activities. These activities include dreams, perceptions, thoughts, and memories. For example, Linda was dreaming when her alarm rang. Brain waves that indicate dreaming can be measured, but dreaming itself is a private mental process—dreams are known only to the dreamer. Linda also perceived a world of color. Activity of the cells in a person's eyes can be measured as they respond to color, but only Linda could see her own mental image of the world. Linda laughed as she remembered the nose-touching psychology lesson. Memories, too, are private mental processes.

Psychologists are also interested in studying people's emotions, or feelings. Emotions can affect both behavior and mental processes. For example, Linda experienced a moment of anxiety when she remembered her math test, and she felt happiness at the thought of seeing Marc. Perhaps Linda's heart raced a bit when she thought about the test or about Marc. Her heart activity was an example of behavior, but her thoughts about the math test and about Marc were private mental processes. We would be unable to observe or measure Linda's thoughts directly. But if she told us about them, we would be observing a behavior—Linda telling us about her thoughts.

The Goals of Psychology

In general, scientists seek to observe, describe, explain, predict, and control the events they study. Psychologists have the same goals. They observe and describe behavior and mental processes to better understand them. A better understanding of behavior enables psychologists to explain, predict, and control behavior.
An example of how psychologists apply the goals of psychology can be seen in the case of Buffalo Bills placekicker Scott Norwood. Norwood had toiled for many years perfecting his techniques and preparing for the day when he would play in a Super Bowl. For several hours a day, he practiced and improved his form on the field. He kicked field goals from various distances and in all extremes of weather. Then, in 1991, he got his chance—the Bills and the New York Giants met in the Super Bowl. But when Norwood had the opportunity to win the game with a short field goal, he missed, handing the victory to the Giants in the final seconds of the game. Norwood had “choked” — he had lost his composure and was unable to perform under pressure.

Losing one’s “cool” and failing to perform effectively in a crucial situation—such as during an important game or while taking a major test—can be very hard on a person. It can hurt an individual’s self-esteem and self-confidence.

Sports psychologists help athletes such as Scott Norwood handle performance problems by applying the goals of psychology. First, they observe and describe the behavior. By measuring athletes’ heart rates and other body processes, psychologists know that problems may occur when athletes are highly excited. Interviews with athletes reveal that they often feel anxious during big games. They are distracted by the cheers and jeers of the crowd and lose their concentration. They cannot focus on the jobs they are supposed to be doing.

Psychologists then explain the behavior in terms of the feelings of anxiety and the distractions that hinder the athletes’ performance. The relationship between anxiety and performance is somewhat complex. A little anxiety is often a good thing. It motivates us to practice for a game or to study for a test. It makes us alert and ready. On the other hand, too much anxiety is harmful. It makes us shaky and distracts us from the task at hand.

Psychologists next predict that athletes will do best when anxiety is moderate and will falter when anxiety becomes too intense. Finally, they help athletes change, and thus control, their behavior and mental processes by teaching them ways of keeping their anxiety at a tolerable level. Psychologists also teach athletes how to filter out the sounds of the fans so they can focus on their task—helping the team win the game.

One method that sports psychologists recommend to help athletes perform more effectively under pressure is called positive visualization. In this method, athletes imagine themselves going through the motions in a critical game situation. A basketball player might, for example, imagine taking a free throw in overtime during a close game. She concentrates on blocking the noise of the crowd from her mind and focuses on the rim. She sees herself raising the ball with one hand as she guides it with the other. She then imagines releasing the ball and watching it glide through the net.

The goal of “controlling” behavior and mental processes is often misunderstood. Some people mistakenly think that psychologists seek ways to make people behave as the psychologists want them to—like puppets on strings. This is not so. Psychologists know that people should be free to make their own decisions. Although psychologists know much about the factors that influence human behavior, they use this knowledge to help people accomplish their own goals.

Psychology as a Science

Psychology is a social science, but it has foundations in the natural sciences. The social sciences, which also include history, anthropology, economics, political science, and sociology, deal with the structure of human society and the nature of the individuals who make up society. These individuals and their behavior and mental processes are the focus of psychology.
The natural sciences, which include biology, chemistry, and physics, are concerned with the nature of the physical world. Some topics that psychologists study, such as the brain, are closely related to the natural sciences, especially biology. Also, like natural scientists, psychologists seek to answer questions by following the steps involved in scientific research. These steps include conducting experiments, collecting and analyzing data, and drawing conclusions. (See Chapter 2.)

Research As a science, psychology tests ideas through various research methods. Two widely used methods are surveys and experimentation. A survey is a method of collecting data that usually involves asking questions of people in a particular group.

Although most psychologists are interested mainly in human behavior, some focus on animal behavior, such as that of sea snails, pigeons, rats, and gorillas. Some psychologists believe that research findings with certain animals can be applied to human beings. Others argue that humans are so distinct that we can only learn about them by studying people. The truth probably lies somewhere in between. For example, by studying the nerve cells of squid (yes, squid), psychologists have been able to learn about the workings of human nerve cells. Only by studying people, however, can we learn about uniquely human qualities such as morality, values, and love.

Psychologists rely on research to learn whether certain methods will work before they use them with clients. Sometimes the research is conducted only with people, as in the case of research on how to help athletes perform under intense pressure. In such cases, psychologists make every effort to protect the research participants. You will read more about research methods in Chapter 2.

Psychological Theories Psychologists organize their ideas about behavior and mental processes into theories. A theory is a statement that attempts to explain why things are the way they are and happen the way they do. Psychological theories discuss principles that govern behavior and mental processes. Psychological theories may include statements about behavior (such as sleeping or aggression), mental processes (such as memories and mental images), and biological processes (such as the effect of chemicals in the brain).

A useful psychological theory allows psychologists to predict behavior and mental processes. For instance, if a theory about fatigue is useful, psychologists can apply it to predict when people will or will not sleep. If a theory does not accurately predict behavior or mental processes, psychologists consider revising or replacing the theory.

In psychology, as in other sciences, many theories have been found inadequate for accurately explaining or predicting the things with which they are concerned. As a result, these theories have been discarded or revised. For example, many psychologists once believed that stomach contractions were the cause of hunger. But then it was observed that many people feel hungry or eat even when they do not have stomach contractions. As a result, psychologists now believe that stomach contractions are only one of many factors in hunger and eating.

THINKING ABOUT PSYCHOLOGY

1. What is psychology? What are the five goals of psychology?

2. In what way is psychology a social science? How is psychology related to the natural sciences?

3. Critical Thinking What do you think is the main value of psychology? Explain your answer.
Parapsychology is the field of study concerned with the supernatural or other phenomena that science cannot explain. The prefix para means “at the side of,” so parapsychology is at the side of psychology. Whether parapsychology has a place within psychology is a highly controversial issue.

Imagine how wealthy you could become if you were able to look into the future. You could check next month’s stock market reports and know what shares to buy or sell. And imagine what power you would have if you were capable of making objects move simply by seeing them move in your mind.

These are examples of extrasensory perception (ESP). Extrasensory perception refers to the perception of objects or events through means other than sensory organs, such as the eyes. In theory, there are four forms of ESP:

- precognition—the ability to know about events before they occur
- psychokinesis—the ability to make objects move by thinking of them as moving
- telepathy—the direct transmission of thoughts or ideas from person to person without anything being spoken or written down
- clairvoyance—the ability to perceive objects that are out of the range of human senses

Most psychologists are skeptical about the existence of ESP. To them, ESP is in the realm of magic, not science. Some psychologists, however, believe that ESP may be a valid, scientific area of study (Bern & Honorton, 1994). The issue for them is whether the existence of ESP can be proved in the laboratory.

The best-known ESP researcher was Joseph Banks Rhine, who began studying ESP in the 1920s. In an experiment in clairvoyance, Rhine used a pack of 25 cards that consisted of 5 sets of 5 cards, each of which had a different symbol on it. If you were to guess which card would show up next, you would be correct 20 percent of the time (1 time in 5) by chance alone. But Rhine found that some people guessed correctly more often than that. He thus concluded that these people might be clairvoyant.

Other studies on ESP have focused on telepathy. In a method called the Ganzfeld procedure, one person acts as a “sender” and another person is the “receiver.” The sender looks at randomly selected images, such as photographs, and tries to “transmit” an image to the receiver, who is in another room. The receiver is then shown four images and is asked to select the one that was transmitted by the sender. A person guessing which picture was transmitted would be correct one time in four by chance. Yet many studies using this procedure find that receivers identify the correct image somewhat more often (Bern & Honorton, 1994; Honorton et al., 1990).

Overall, however, there remain many reasons to be skeptical of ESP. For one thing, people who support ESP are probably less likely to report results that fail to show evidence of ESP. Furthermore, many things that look like ESP are really just coincidence. If you flip a coin indefinitely, eventually you will flip heads 10 times in a row. If you report eventual success and do not report weeks of failure, you might give the impression that you have a special coin-flipping ability.

Most important, experiments in ESP often do not yield the same results twice (Hyman, 1994). Often, people who appear to have ESP with one researcher fail to demonstrate it with another. In fact, from all studies of ESP, not one person has emerged who can reliably show ESP from one occasion to another, and with more than one researcher. As a result, most psychologists do not believe in extrasensory perception. ESP remains only an unproven theory.

Think About It
Describe an instance in which you or someone you know seemed to have ESP. How could you prove whether it really was ESP or not?
What Psychologists Do

All psychologists share a keen interest in behavior and believe in the value of scientific research. They also share the belief that theories about behavior and mental processes should be supported by scientific evidence. They accept that something is true only if the evidence shows it is so.

Some psychologists are interested mainly in research. They investigate the factors that give rise to behavior and mental processes. They form theories about why people and animals do the things they do. Then they test their theories by predicting when behaviors will occur.

Clinical Psychologists

Clinical psychologists make up the largest group of psychologists. (See Figure 1.1.) Clinical psychologists are the people most of us think of when we hear the term psychologist.

Clinical psychologists help people with psychological problems, such as anxiety or depression, or severe psychological disorders, such as schizophrenia. Clinical psychologists help their clients overcome problems and adjust to the demands of their lives. They also help people who have problems with relationships, drug abuse, or weight control. Most likely, a clinical psychologist was helping Linda's friend Nick overcome his drug problem.

Clinical psychologists are trained to evaluate psychological problems through the use of interviews and psychological tests. Then these psychologists help clients understand their problems and resolve them by changing ineffective or harmful behavior. (See Chapter 19.)

Clinical psychologists work in hospitals, in prisons, and in college and university clinics. Many clinical psychologists are in private practice. Some clinical psychologists divide their time among clinical practice, teaching, and research.

Clinical psychologists should not be confused with psychiatrists. A psychiatrist is a medical doctor who specializes in the treatment of psychological problems and who can prescribe medication for clients. Psychologists also specialize in the treatment of psychological problems, but because they are not medical doctors, they may not prescribe medication for their clients.

Counseling Psychologists

Like clinical psychologists, counseling psychologists use interviews and tests to identify their clients' problems. Counseling psychologists typically treat people who have adjustment problems rather than serious psychological disorders. For example, a counseling psychologist's clients may have difficulty making decisions about their
careers, or they may find it hard to make friends. They may be experiencing conflicts with family members, teachers, employers, or colleagues. Counseling psychologists help their clients clarify their goals, overcome their adjustment problems, and meet challenges. Counseling psychologists often are employed in businesses and in college and university counseling and testing centers.

**School Psychologists**

Your school district may employ one or more school psychologists. School psychologists identify and help students who have problems that interfere with learning. Typical problems that school psychologists deal with include peer group and family problems, psychological problems, and learning disorders, which are problems in learning to read, write, or do math.

School psychologists identify students with problems by talking with teachers, parents, and the students themselves. School psychologists may also administer tests, such as intelligence tests and achievement tests. These tests, which are usually given to large groups of students, help identify students with special abilities as well as students who need assistance. For example, the psychologist at Linda's school noticed her exceptional results on the math section of an achievement test and recommended placing Linda in an advanced math class.

School psychologists also observe students in the classroom to see how they interact with their teachers and peers. After gathering the information they need, school psychologists advise teachers, school officials, and parents about how to help certain students reach their potential or overcome their learning difficulties.

In addition, school psychologists make recommendations regarding the placement of students in special classes and programs. In some school districts, student placement is the major responsibility of the school psychologist.

**Educational Psychologists**

Like school psychologists, educational psychologists are concerned with helping students learn. But they generally focus on course planning and instructional methods for an entire school system rather than on designing a program of study for an individual student.

Educational psychologists are concerned with theoretical issues that relate to learning, measurement of abilities, and child and adolescent development. Their research interests include the ways in which learning is affected by:

- psychological factors, such as motivation, emotions, creativity, and intelligence;
- cultural factors, such as beliefs;
- economic factors, such as the level of income earned by a person's family; and
- instructional methods used in the classroom.

Some educational psychologists help prepare standardized tests, such as the Standard Assessment Test (SAT). They study various tests to determine the type of test that can most effectively predict success in college. They may also examine individual test items to determine whether these items make a useful contribution to the test as a whole.

**Developmental Psychologists**

Developmental psychologists study the changes that occur throughout the life span. These changes can be of the following types:

- physical (examples include changes in height and weight, adolescent growth, sexual maturity, physical aspects of aging)
- emotional (for instance, development of self-concept and self-esteem)
- cognitive (such as changes from childhood to adulthood in mental images of the world outside, or how children learn right and wrong)
- social (such as formation of bonds between parents and children, relationships with peers, or intimate relationships between adults)

Developmental psychologists also attempt to sort out the relative influences of heredity and the environment on development. (See Chapters 3 and 10.)

Some developmental psychologists are especially interested in the challenges of adolescence. For example, how do adolescents handle the competing, and often contradictory, messages of peers (who pressure them to act in one way) and parents (who want them to act in another way)? How can psychologists help parents and school officials encourage adolescents to avoid activities that may be harmful to their physical and psychological well-being? What are the causes of depression and suicide among teens? How can people help prevent these painful situations from occurring?

**Personality Psychologists**

Personality psychologists identify characteristics, or traits. Shyness and friendliness are examples of traits. Personality psychologists look for the many different traits people have and study the development of these traits. Personality psychologists share with clinical psychologists an interest in the origins of psychological problems and disorders. These psychologists are also concerned with issues such as anxiety, aggression, and gender roles. Gender roles are the behavior patterns expected of women and men in a given culture.

**Social Psychologists**

Social psychologists are concerned with people's behavior in social situations. They would be interested, for example, in studying the reasons for Linda's attraction to Marc. Whereas personality psychologists tend to look within people for explanations of behavior, social psychologists tend to focus on external influences.

Social psychologists study the following issues:

- the ways in which women and men typically behave in a given setting
- the physical and psychological factors that attract people to one another
- the reasons people tend to conform to group standards and expectations
- how people's behavior changes when they are members of a group
- the reasons for-and the effects of prejudice and discrimination within various groups and from one group to another
- the situations in which people act aggressively and those in which they help others

**Experimental Psychologists**

Psychologists in all specialties may conduct experimental research. However, experimental psychologists conduct research into basic processes such as the functions of the nervous system. Other basic processes include sensation and perception, learning and memory, and thinking and motivation.

Experimental psychologists would be interested in exploring the pathways by which Linda's alarm clock woke her. They would want to know what triggered her memory of the psychology teacher's nose-touching demonstration. In addition, experimental psychologists would be interested in the biological and psychological factors that contributed to Linda's feeling of hunger.

Some experimental psychologists focus on the relationships between biological changes (such as the release of hormones into the bloodstream) and psychological events (such as feelings of anxiety or depression). These experimental psychologists are called biological psychologists.

Experimental psychologists are more likely than other psychologists to engage in basic research. Basic research is research that has no immediate application and is done for its own sake. The findings of experimental psychologists are often put into practice by other psychological specialists. Basic research into motivation, for example, has helped clinical and counseling psychologists develop ways of helping people control their eating habits. Basic research into learning and memory has helped educational psychologists enhance learning conditions in schools.

**Other Specialists**

You have already read about sports psychologists and how they can help athletes. There are several other specialties in psychology.
Industrial and Organizational Psychologists
Industrial psychologists focus on people and work. Organizational psychologists study the behavior of people in organizations, such as business firms. Industrial psychology and organizational psychology are closely related. Psychologists in these fields often are trained in both areas.

Industrial and organizational psychologists are employed by business firms to improve working conditions and increase worker output. They may assist in hiring, training, and promoting employees. They may also devise psychological tests for job applicants and conduct research into the factors that contribute to job satisfaction. In addition, some industrial and organizational psychologists have counseling skills and help employees who have problems on the job.

Environmental Psychologists
Does crowding in cities make people irritable? Does smog have an effect on people's ability to learn? Environmental psychologists ask these types of questions. They focus on the ways in which people influence, and are influenced by, their physical environment. Environmental psychologists are concerned with the ways in which buildings and cities serve, or fail to serve, human needs. They investigate the psychological effects of extremes of temperature, noise, and air pollution.

Consumer Psychologists
Consumer psychologists study the behavior of shoppers to explain and predict their behavior. They also assist others to apply their findings. For example, they work with advertisers to create effective newspaper ads and television commercials. They advise store managers about window displays and shelf arrangement to attract customers. Have you ever noticed that in many supermarkets, milk is shelved far away from the store entrance? That is because milk is an item that many people buy frequently. Its placement at the rear of the store ensures that shoppers will pass—and hopefully buy—other items on the way to the milk shelf.

Forensic Psychologists
When an attorney wants an expert witness to testify whether a person accused of a crime is or is not competent to stand trial, the attorney might call on a forensic psychologist. Forensic psychologists work within the criminal justice system. In addition to testifying about the psychological competence of defendants to stand trial, they may explain how certain kinds of psychological problems give rise to criminal behavior. Psychologists are also employed by police departments to
- assist in the selection of police officers;
- help police officers cope with job stress; and
- train police officers in the handling of dangerous situations such as suicide threats, hostage crises, and family violence.

Health Psychologists
Health psychologists examine the ways in which behavior and mental processes are related to physical health. They study the effects of stress on health problems such as headaches and heart disease. Health psychologists try to explain why some people follow their doctor’s advice and other people do not. Health psychologists also help people adopt healthful behaviors such as exercising and quitting smoking.

A worker clears rubble from the site of a collapsed building. What types of psychologists might be interested in studying the effects of such work?
People have always been interested in the behaviors of other people, and thus psychology is as old as human history. Interest in the actions, motives, and thoughts of human beings can be traced as far back as the philosophers and scientists of ancient times.

Roots from Ancient Greece

More than 2,000 years ago, Plato (428–348 or 347 B.C.), a student of Socrates in ancient Greece, recorded his teacher's advice—"Know thyself"—a phrase that has remained a motto of psychological thought ever since. Socrates suggested that we can learn much about ourselves by carefully examining our thoughts and feelings. Psychologists call this method of learning introspection, which means "looking within."

One of Plato's students, the Greek philosopher Aristotle (384–322 B.C.), continued in this line of inquiry about human behavior. He raised many issues that are still discussed today (as, for example, in this textbook). One of Aristotle's works is called Peri Psyches, which means "about the mind." Aristotle's approach was scientific. He argued that human behavior, like the movements of the stars and the seas, is subject to certain rules and laws. He believed one such universal law was that people are motivated to seek pleasure and to avoid pain—a view still found in some modern psychological theories. Peri Psyches begins with a history of psychological thought. Then it explores topics such as personality, sensation and perception, thought, intelligence, needs and motives, feelings and emotions, and memory.

It is true that a book on psychology, with content similar to that of this textbook, was written by Aristotle more than 2,000 years ago. The name of that book is Peri Psyches, which means "about the mind."

The ancient Greeks also theorized about various psychological problems, such as confusion and bizarre behavior. Throughout human history, many people have attributed such disorders to supernatural forces. The ancient Greeks generally believed that the gods punished people for wrongdoing by causing them confusion and madness. The Greek physician Hippocrates (c. 460–c. 377 B.C.) was an exception. He suggested that such problems are caused by abnormalities in the brain. But this idea that biological factors can affect our thoughts, feelings, and behavior was to lie dormant for more than 2,000 years.

The Middle Ages

During the Middle Ages, most Europeans believed that problems such as agitation and confusion were signs of possession by demons. A popular belief of the time was that possession by the devil was punishment for sins or the result of deals made with the devil.
Wilhelm Wundt and Structuralism

Wilhelm Wundt (1832–1920) and his students founded a field of psychology that came to be known as structuralism. Structuralists were concerned with discovering the basic elements of conscious experience. Wundt broke down conscious experience into two separate categories: objective sensations and subjective feelings. Objective sensations, such as sight and taste, were assumed to accurately reflect the outside world. Subjective feelings were thought to include emotional responses and mental images.

Structuralists believed that the human mind functioned by combining these basic elements of experience. For example, a person can experience an apple objectively by observing its shape, color, texture, and taste. The person can also experience the apple subjectively by remembering how good it feels to bite into it. Using the method of introspection, Wundt and his students carefully examined and reported their experiences.

William James and Functionalism

A decade after Wundt, introspection convinced Harvard University professor William James (1842–1910) that experience cannot be broken down the way structuralists believed. James maintained that experience is a fluid and continuous "stream of consciousness." He focused on the relationships between experience and behavior and described his views in The Principles of Psychology. The book, which was published in 1890, is considered by many people to be the first modern psychology textbook.

James was one of the founders of the school of functionalism. Functionalists were concerned with how mental processes help organisms adapt to their environment. They stressed the application of their findings to everyday situations.
Functionalism differed from structuralism in several ways. Whereas structuralism relied only on introspection, the methods of functionalism included behavioral observation in the laboratory as well as introspection. The structuralists tended to ask, "What are the elements (structures) of psychological processes?" The functionalists, on the other hand, tended to ask, "What are the purposes (functions) of behavior and mental processes? What do certain behaviors and mental processes accomplish for the person (or animal)?"

Functionalists proposed that adaptive behavior patterns are learned and maintained because they are successful. For example, some students continue to study because they have learned that studying leads to good grades. Less adaptive behavior patterns drop out, or are discontinued. For example, if you ask someone for a date repeatedly and are refused each time, eventually you will probably stop asking the person out.

Adaptive (successful) actions are repeated and eventually become habits. The formation of habits is seen in such acts as turning doorknobs or riding a bicycle. At first, these acts require our full attention. But through repetition—and success—they become automatic. The multiple tasks involved in learning to type on a keyboard or to write in longhand also become routine through successful repetition. We then perform them without much attention. Habit allows us to take the mechanics of typing or writing for granted and to concentrate instead on what we are writing.

**John B. Watson and Behaviorism**

Picture a hungry rat in a maze. It moves along until it reaches a place where it must turn left or right. If the rat is consistently rewarded with food for turning right at that place, it will learn to turn right when it arrives there—at least, when it is hungry. But what does the rat think when it is learning to turn right at that place in the maze?

Does it seem absurd to try to place yourself in the mind of a rat? It did to John Broadus Watson (1878–1958), when he was asked by examiners to consider this question as a requirement for his doctoral degree in psychology.

He was asked this question because functionalism was the dominant school of psychology at the time. Functionalists were concerned with the stream of consciousness as well as with behavior. Although Watson agreed with the functionalist focus on the importance of learning, he believed that it is unscientific to study consciousness—especially the consciousness of animals. He saw consciousness as a private event that is known only to the individual. He asserted that if psychology was to be a natural science, like physics or chemistry, it must be limited to observable, measurable events—that is, to behavior. As the founder of the school of behaviorism, Watson defined psychology as the scientific study of observable behavior.

**B. F. Skinner and Reinforcement**

Harvard University psychologist B. F. Skinner (1904–1990) added to the behaviorist tradition by introducing the concept of reinforcement. Skinner
showed that when an animal is reinforced, or rewarded, for performing an action, it is more likely to perform that action again in the future. He demonstrated that laboratory animals, such as rats and pigeons, are capable of learning complex behavior patterns if they are reinforced in the right ways. Behaviorists have taught animals to peck buttons, turn in circles, climb ladders, push toys across the floor, and even shoot baskets by rewarding the animals for performing the desired behavior.

According to Skinner, people learn in the same way animals do. Like animals, people learn to behave in certain ways because they have been reinforced for doing so.

The Gestalt School

Look at the two drawings in Figure 1.2 and answer the questions posed in the caption. These drawings demonstrate the idea that the context in which something occurs affects the way we perceive it. For example, in Drawing A, the circles in the centers of the two sets are the same size. However, we may think they are different sizes because of the contexts in which they appear. That is, one circle is surrounded by larger circles and the other is surrounded by smaller circles.

In Drawing B, the second symbols in the two rows are identical. The symbol in the top row may look like the letter B because it is with the letters A, C, and D. However, when the identical symbol is with the numbers 12, 14, and 15, it may look more like the number 13. Even though the two symbols are identical, the context in which each one appears influences what we perceive it to be.

German psychologists Max Wertheimer, Kurt Koffka, and Wolfgang Köhler were fascinated by the ways in which context influences people's interpretation of information. In the 1920s, they founded the school of Gestalt psychology. The psychology of Gestalt, which means "shape" or "form" in German, is based on the idea that perceptions are more than the sums of their parts. Rather, they are wholes that give shape, or meaning, to the parts. As such, Gestalt psychology rejects the structuralist idea that experience can be broken down into individual parts or elements.

Gestalt psychologists also reject the behaviorist notion that psychologists should concentrate only on observable behavior. In addition, Gestalt psychologists believe that learning is active and purposeful. They disagree with the behaviorist view that learning is mechanical.
Köhler and the other founders of Gestalt psychology demonstrated that much learning, especially problem solving, is accomplished by insight, not by mechanical repetition. Insight is the reorganization of perceptions that enables an individual to solve a problem. In other words, insight is the sudden appearance of the Gestalt, or form, that enables the individual to see the solution.

Sigmund Freud and the School of Psychoanalysis

Sigmund Freud (1856–1939), a Viennese physician, was perhaps the most famous of the early psychologists. The school of thought he founded—called psychoanalysis—emphasizes the importance of unconscious motives and internal conflicts in determining human behavior.

Freud's theory, more than the others, has become a part of popular culture. You may be familiar with several Freudian concepts. For example, have you ever tried to "interpret" a slip of the tongue, or have you ever tried to figure out the "meaning" of a dream you had? The ideas that people are driven by hidden impulses and that verbal slips and dreams represent unconscious wishes largely reflect Freud's influence on popular culture.

Structuralists, functionalists, behaviorists, and Gestalt psychologists all conducted their research in the laboratory. Freud, however, gained his understanding of human behavior through consultations with patients. Freud was astounded at how little insight these patients had into their own ideas and feelings. He came to believe that unconscious processes, especially sexual and aggressive urges, are more important than conscious experience in governing people's behavior and feelings.

Freud thought that most of what fills an individual's mind is unconscious and consists of conflicting impulses, urges, and wishes. According to Freud's theories, people's behavior is aimed at satisfying these impulses, even though some of them seem socially inappropriate or even unacceptable. But at the same time, people want to see themselves as good and decent human beings. Thus, they often fool themselves about the real motives for their behavior. Freud attempted to help people gain insight into their unconscious conflicts and find socially acceptable ways of expressing their wishes and meeting their needs.

THINKING ABOUT PSYCHOLOGY

1. Describe the main differences between structuralism and functionalism.
2. Why do behaviorists object to schools of psychology that study consciousness?
3. Critical Thinking Identify one example of the influence of Sigmund Freud's psychoanalytic theory on popular culture.
Contemporary Perspectives

Today we no longer find psychologists who describe themselves as structuralists or functionalists. And although the school of Gestalt psychology inspired current research in perception and problem solving, few would consider themselves Gestalt psychologists. The numbers of traditional behaviorists and psychoanalysts also have been declining. Many current psychologists in the behaviorist tradition have modified the theories of Watson and Skinner. Similarly, many contemporary psychoanalysts do not use the methods Freud did.

Nevertheless, the historical traditions of psychology find expression in contemporary perspectives on psychology. The most important of these are the biological, cognitive, humanistic, psychoanalytic, learning, and sociocultural perspectives. Each perspective emphasizes different topics of investigation and has different approaches.

The Biological Perspective

The biological perspective emphasizes the influence of biology on our behavior. Psychologists assume that our mental processes—our thoughts, fantasies, and dreams—are made possible by the nervous system. They point especially to its key component, the brain. Biologically oriented psychologists look for the connections between events in the brain, such as the activity of brain cells, and behavior and mental processes. They use several techniques, such as CAT scans and PET scans, to show which parts of the brain are involved in various mental processes. (See Chapter 3.) Biological psychology has shown that certain parts of the brain are highly active when we listen to music, other parts are active when we solve math problems, and still other parts are involved with certain psychological disorders. Biological psychologists have also learned that certain chemicals in the brain are connected with the storage of information—that is, the formation of memories.

Moreover, biological psychologists are interested in the influences of hormones and genes. Hormones are chemicals that glands release into the bloodstream to set in motion various body functions, such as growth and digestion. Genes are the basic units of heredity. Biological psychologists study the influences of genes on personality traits such as intellectual or artistic talent, psychological health, and various behavior patterns.

The Cognitive Perspective

The cognitive perspective emphasizes the role played by thoughts in determining behavior. Cognitive psychologists study mental processes to understand human nature. They investigate the ways in which people perceive information and make mental images of the world, solve problems, and dream and daydream. Cognitive psychologists, in short, study what we refer to as the mind.

The cognitive tradition has roots in Socrates' maxim "Know thyself" and in his method of introspection for learning about the self. Cognitive psychology also has roots in structuralism, functionalism, and Gestalt psychology. Each of these schools of thought has addressed issues that are of interest to cognitive psychologists.

Today many psychological theories have roots in the cognitive perspective. One of these is the developmental theory of Swiss psychologist Jean Piaget. Piaget showed how a child's mental picture of the world grows more sophisticated as the child matures. (See Chapter 10.)

Another aspect of the cognitive perspective involves information processing. Many cognitive psychologists have been influenced by computer science. Computers process information to solve problems. Information is first fed into the computer. Then it is placed in the working memory while it is being worked on, or manipulated. Finally, the information is stored more or less permanently on the computer's hard drive or on a floppy disk.

Many psychologists speak of people as having working memories and storage facilities (or long-term memories). If information has been placed in computer storage or in a person's long-term memory, it must be retrieved before it can be worked on again. To retrieve information from computer storage, people must know the name for the data file and the rules for retrieving data files. Similarly, say cognitive psychologists, people need certain cues to retrieve information from their long-term memories. Otherwise, the information is lost to them.

Cognitive psychologists sometimes refer to our strategies for solving problems as our "mental programs" or "software." In this computer metaphor, our brains are the "hardware" that runs
Cognitive psychologists believe that people's behavior is influenced by their values, their interpretations, and their choices. For example, an individual who interprets a casual remark as an insult may react with hostility. But the same remark directed at another person might be perceived very differently by that person and thus may meet with a different reaction.

The Humanistic Perspective

The humanistic perspective stresses the human capacity for self-fulfillment and the importance of consciousness, self-awareness, and the capacity to make choices. Consciousness is seen as the force that shapes people's personalities.

Humanistic psychology considers people's personal experiences to be the most important aspect of psychology. Humanistic psychologists believe that self-awareness, experience, and choice permit us to "invent ourselves." In other words, they enable us to fashion our growth and our ways of relating to the world as we go through life. Unlike the behaviorists, who assume that behavior is caused largely by the stimuli that act on us, humanistic psychologists believe that we are free to choose our own behavior.

The humanistic perspective views people as basically good and helpful to others. Humanistic psychologists help people get in touch with their feelings, manage their negative impulses, and realize their potential.

Critics of the humanistic perspective, especially behaviorists, insist that psychology should be scientific and address only observable events. They argue that people's inner experiences are unsuited to scientific observation and measurement. Humanistic psychologists, however, insist that inner experience is vital to the understanding of human nature.

The Psychoanalytic Perspective

The psychoanalytic perspective stresses the influence of unconscious forces on human behavior. In the 1940s and 1950s, psychoanalytic theory dominated the practice of psychotherapy and greatly influenced psychology and the arts. Although psychoanalytic thought no longer dominates psychology, its influence continues to be felt. Psychologists who follow Sigmund Freud's approach today focus less on the roles of unconscious sexual and aggressive impulses and more on conscious choice and self-direction.

It is true that Sigmund Freud's theories continue to influence psychology today. However, psychoanalytic theory no longer dominates the field, and contemporary psychologists who follow Freud's approach focus on different things than Freud did.

Freud believed that aggressive impulses are common reactions to the frustrations of daily life and that we seek to vent these impulses on other people. Because we fear rejection or retaliation, we put most aggressive impulses out of our minds. But by holding aggression in, we set the stage for future explosions. Pent-up aggressive impulses demand...
Contemporary Psychological Perspectives

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Subject Matter</th>
<th>Key Assumption</th>
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<tr>
<td>Biological</td>
<td>Nervous system, glands and hormones, genetic factors</td>
<td>Biological processes influence behavior and mental processes.</td>
</tr>
<tr>
<td>Cognitive</td>
<td>Mental images, information processing, thinking, language</td>
<td>Perceptions and thoughts influence behavior.</td>
</tr>
<tr>
<td>Humanistic</td>
<td>Subjective experience</td>
<td>People make free and conscious choices based on their unique experiences.</td>
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<tr>
<td>Psychoanalytic</td>
<td>Unconscious processes, early childhood experiences</td>
<td>Unconscious motives influence behavior.</td>
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<tr>
<td>Learning</td>
<td>Environmental influences, habitual behavior, observational learning</td>
<td>Personal experience and reinforcement guide individual development.</td>
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<tr>
<td>Sociocultural</td>
<td>Ethnicity, gender, culture, socioeconomic status</td>
<td>Sociocultural, biological, and psychological factors create individual differences.</td>
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FIGURE 1.3 Contemporary psychologists differ in their approaches to psychological thought. These six broad perspectives are the most common ways to view behavior today.

outlets. Partial outlets can be provided by physical activity—for example, sports—but we may also direct hostile impulses toward strangers. (That guy who intentionally bumped into you in the hallway, according to Freud, might be venting unconscious anger toward his parents.)

The Learning Perspective

The learning perspective emphasizes the effects of experience on behavior. In the views of many psychologists, learning is the essential factor in observing, describing, explaining, predicting, and controlling behavior. The term learning, however, has different meanings to different psychologists. For example, traditional behaviorists and social-learning theorists have different attitudes toward the role of consciousness in learning.

John B. Watson and other behaviorists found no role for consciousness. They believed that people do things because of their learning histories and the influence of their situations, not because of conscious choice. Behaviorists are not concerned with what an organism knows. They are concerned with what the organism does. Behaviorists emphasize the importance of environmental influences and focus on the learning of habits through repetition and reinforcement.

In contrast, social-learning theory suggests that people can change their environments or create new ones. Furthermore, social-learning theory holds that people can learn intentionally by observing others. Social-learning theorists believe that conscious observational learning provides people with a storehouse of responses to life's situations. People's expectations and values, however, influence whether they choose to do what they have learned how to do. Since the 1960s, social-learning theorists have gained influence in the areas of development, personality, and methods of therapy.

Psychologists who take the learning perspective believe that behavior is learned either from direct experience or by observing other people. For example, people will behave a certain way when they expect to be rewarded for that behavior. Social-learning theorists have a cognitive leaning, however. Like cognitive theorists, social-learning theorists believe that people act in a particular way
only when they recognize that the circumstances call for that behavior. For example, we act with hostility when we have been provoked, or we act with friendliness when we have been treated well.

The Sociocultural Perspective

The sociocultural perspective addresses such issues as ethnicity, gender, culture, and socioeconomic status. It is based on the idea that these factors have a significant impact on human behavior and mental processes.

Studies of the experiences of various ethnic groups in the United States highlight the influences of social forces on the individual. The following items are among the issues related to ethnicity that sociocultural psychologists study:

- inclusion of people from various ethnic groups in psychological research studies
- bilingualism
- ethnic differences in views of the world or in various types of achievement
- ethnic differences in susceptibility to physical and psychological problems
- multicultural issues in the practice of psychotherapy and treatment
- prejudice

The study of such topics enables people to appreciate the cultural heritages of various ethnic groups and understand the challenges they face.

Sociocultural theorists also examine gender—the state of being male or being female. Gender is not simply a matter of anatomy. It involves a complex web of cultural expectations and social roles that affect people's self-concepts and behavior. One reason for the importance of gender studies is that such studies address issues concerning similarities and differences between males and females.

Historically, much of the scientific research into gender roles and gender differences assumed that male behavior represented the norm for all people (Ader & Johnson, 1994; Matlin, 1993; Walsh, 1993). Women traditionally have been channeled into domestic careers, regardless of their wishes. Not until relatively modern times has higher education been seen as a suitable pursuit for women. Women have attended college in the United States only since 1833, when Oberlin College in Ohio first admitted women. Today more than half of postsecondary students in the United States are women.

Contemporary women have also succeeded in academic and professional fields—such as medicine, law, and engineering—that traditionally were reserved for men. In the United States, women now account for 40 percent of medical and law students and for 1 in 6 engineering graduates (Matlin, 1993). By contrast, in the 1970s, women accounted for only 1 engineering graduate in 25 (Morrison & Von Glinow, 1990).

THINKING ABOUT PSYCHOLOGY

1. How do cognitive psychologists compare people's mental processes to the working of computers?
2. How would a psychoanalyst explain aggression?
3. Explain how the humanist and social-learning perspectives support the view that people are free to make choices.
4. Critical Thinking: How does knowledge of cultural differences enrich the study of psychology?