1

LEARNING OBJECTIVES

STUDY HELP NOTE: For each section of every chapter in this text there are numbered learning objectives. These learning objectives represent the key questions that students should be able to understand and answer after reading the chapter. They appear at the beginning of each chapter, at the beginning of each relevant section in the chapter, and in the chapter summary.

1.1 What is the definition and what are four primary goals of psychology?

1.2 What were the basic ideas of structuralism and functionalism, and who were the important people in those early fields?

1.3 What were the basic ideas and who were the important people behind the early approaches known as Gestalt, psychoanalysis, and behaviorism?

1.4 What are the basic concepts of the modern perspectives known as psychodynamics, behaviorism, humanism, biopsychology, cognitive psychology, the evolutionary perspective, and the sociocultural perspective?

1.5 What were the contributions of Skinner, Maslow, and Rogers?

1.6 What's the difference between a psychiatrist and a psychologist, and what other types of professionals work in the various areas of psychology?

1.7 Why is psychology a science and what are the steps in using the scientific method?

1.8 How do psychologists use naturalistic and laboratory settings to describe behavior, and what are the advantages and disadvantages associated with these settings?

1.9 How do psychologists use case studies and surveys to describe behavior, and what are some drawbacks to each of these methods?

1.10 What is the correlational technique and what does it tell researchers about relationships?

1.11 How do researchers use operational definitions, independent and dependent variables, experimental and control groups, and random assignment in designing an experiment?

1.12 What are the placebo and the experimenter effects, and how do single-blind and double-blind studies control for those effects?

1.13 How might a real experiment be conducted?

1.14 What are the ethical concerns when conducting research with people and animals?

1.15 What are the basic principles of critical thinking, and how can using critical thinking help people in their everyday lives?

1.16 How might critical thinking be applied to a real-world example?

What Is Psychology?

THE FIELD OF PSYCHOLOGY

Some people believe that psychology is just the study of people and what makes them tick. Psychologists do study people, but they study animals, too. What makes people and animals "tick" is what goes on inside their bodies and brains as well as what they do.

1.1 *What is the definition and what are four primary goals of psychology?*

Psychology is the scientific study of behavior and mental processes. *Behavior* includes all of our outward or overt actions and reactions, such as talking, facial expressions, and movement. *Mental processes* refer to all the internal, covert activity of our minds, such as thinking, feeling, and remembering. Why "scientific?" To study behavior and mental processes in both animals and humans, researchers have to observe them. Whenever a human being is observing anyone or anything, there's always a possibility that the observer will see only what he or she expects to see. Psychologists don't want to let these possible biases* cause them to make faulty observations. They want to be as precise and measure as carefully as they can, so they use the scientific method to study psychology.

psychology
the scientific study of behavior and mental processes.

PSYCHOLOGY'S GOALS

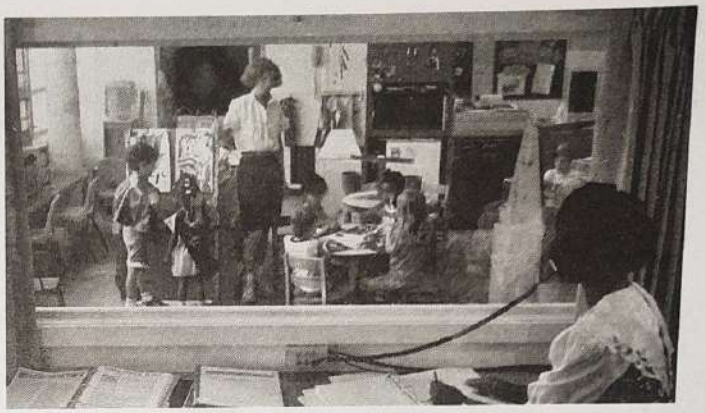
Every science has goals. In physics, the goals concern learning how the physical world works. In astronomy, the goals are to chart the universe and understand both how it came to be and what it is becoming. In psychology, there are four goals that aim at uncovering the mysteries of human and animal behavior: description, explanation, prediction, and control.

*Biases: personal judgments based on beliefs rather than facts.

DESCRIPTION: WHAT IS HAPPENING? The first step in understanding anything is to give it a name. *Description* involves observing a behavior and noting everything about it: what is happening, where it happens, to whom it happens, and under what circumstances it seems to happen.

For example, a teacher might notice that a young girl in his second-grade classroom is behaving oddly. She's not turning in her homework, her grades are slipping badly, and she seems to have a very negative attitude toward school.

That's *what* she is doing. The description of what she is doing gives a starting place for the next goal: *why* is she doing it?



The researcher in the foreground is watching the children through a one-way mirror to get a description of their behavior. Observations such as these are just one of many ways that psychologists have of investigating behavior. Why is it important for the researcher to be behind a one-way mirror?

EXPLANATION: WHY IS IT HAPPENING? To find out why the girl is doing all these things, the teacher would most likely ask the school counselor to administer some tests. Her parents might be asked to take her to a pediatrician to make sure that there is no physical illness, such as an allergy. They might also take her to a psychologist to be assessed. In other words, they are looking for an *explanation* for her behavior. Finding explanations for behavior is a very important step in the process of forming theories of behavior. A *theory* is a general explanation of a set of observations or facts. The goal of description provides the observations, and the goal of explanation helps to build the theory.

If all the tests seem to indicate that the young girl has a learning problem, such as dyslexia (an inability to read at expected levels for a particular age and degree of intelligence), the next step would be trying to predict what is likely to happen if the situation stays the same.

PREDICTION: WHEN WILL IT HAPPEN AGAIN? Determining what will happen in the future is a *prediction*. In the example, the psychologist or counselor would predict (based on previous research into similar situations) that this little girl will probably continue to do poorly in her schoolwork and may never be able to reach her full learning potential. Clearly, something needs to be done to change this prediction, and that is the point of the last of the four goals of psychology: changing or modifying behavior.

CONTROL: HOW CAN IT BE CHANGED? *Control*, or the modification of some behavior, has been somewhat controversial in the past. Some people hear the word *control* and think *brainwashing*, but that is not the focus of this goal. The goal is to change a behavior from an undesirable one (such as failing in school) to a desirable one (such as academic success).

In the example of the young girl, there are certain learning strategies that can be used to help a child (or an adult) who has dyslexia improve reading skills (Aylward et al., 2003; Shaywitz, 1996). The psychologist and educators would work together to find a training strategy that works best for this particular girl.

Not all psychological investigations will try to meet all four of these goals. In some cases, the main focus might be on description and prediction, as it would be for a personality theorist who wants to know what people are like (description) and what they might do in certain situations (prediction). Some psychologists are interested in both description and explanation, as is the case with experimental psychologists who design research to find explanations for observed (described) behavior. Therapists, of course, would be more interested in control, although the other three goals would be important in getting to that goal.

These goals have not really changed in the years since psychology's beginnings, but the methods of achieving them certainly have changed. In the next section, we'll take a look at the early pioneers in psychology.

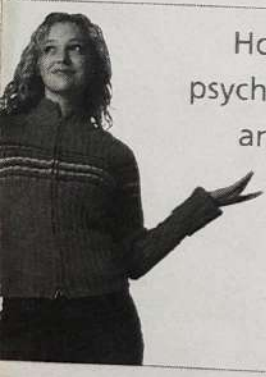
PRACTICE **QUIZ:** HOW MUCH DO YOU REMEMBER?

STUDY HELP NOTE: These practice quizzes are spaced throughout each chapter to give students an opportunity to check their understanding of the material in each section and provide practice for exams. The answers to each quiz can be found upside down at the end of each quiz.

Pick the best answer.

1. In the definition of psychology, *behavior* means
   a. internal, covert processes.
   b. mental processes.
   c. outward or overt actions and reactions.
   d. only human behavior.
2. A psychologist is interested in what a particular person might do in a stressful situation. This psychologist is most interested in the goal of
   a. description.
   b. explanation.
   c. prediction.
   d. control.
3. Dr. Watson designs a special behavior program for helping children who are bullies learn how to be less aggressive and more successful in social relationships. Dr. Watson is most interested in the goal of
   a. description.
   b. explanation.
   c. prediction.
   d. control.
4. The first step in studying animal behavior is to observe animals and record everything they do, when they do it, and what is going on around them when they do it. This meets the goal of
   a. description.
   b. explanation.
   c. prediction.
   d. control.
5. Experimental psychologists, who design experiments to determine the causes of behavior, would be most interested in the goal of
   a. description.
   b. explanation.
   c. prediction.
   d. control.

Answers: 1-c, 2-c, 3-d, 4-a, 5-b.



How long has psychology been around—and where did it begin?

Psychology Then: The History of Psychology

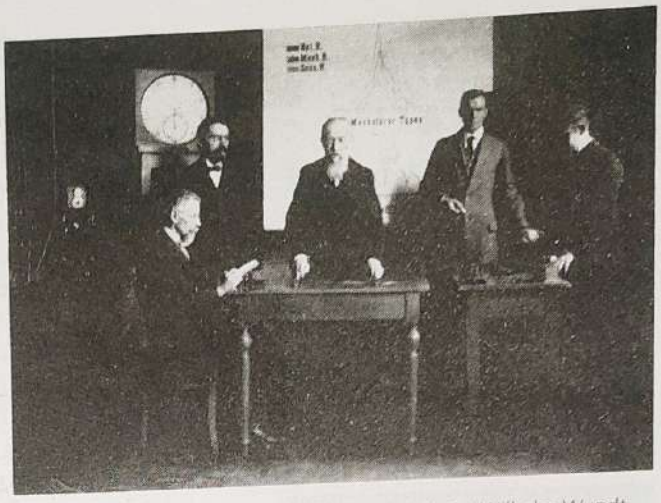
IN THE BEGINNING: WUNDT, INTROSPECTION, AND THE LABORATORY

How long has psychology been around—and where did it begin? Psychology is a relatively new field in the realm of the sciences, only about 125 years old. It's not that no one thought about what makes people tick before then; on the contrary, there were philosophers,* medical doctors, and physiologists** who thought about little else. Aristotle, who lived from 384–322 B.C., wrote about the relationship of the soul to the body (with the two being aspects of the same underlying structure) in his *De Anima* as well as other works (Durrant, 1993; Everson, 1995). Plato, his teacher (427–347 B.C.), felt that the soul could exist separately from the body, a view that has become known as *dualism* (Jackson, 2001). René Descartes, a seventeenth-century French philosopher and mathematician, agreed with Plato and believed that the pineal gland (a small organ at the base of the brain) was the seat of the soul (Kenny, 1968, 1994). Philosophers tried to understand or explain the human mind and its connection to the physical body, while medical doctors and physiologists wondered about the physical connection between the body and the brain. For example, physician and physicist Gustav Fechner is often credited with performing some of the first scientific experiments that would form a basis for experimentation in psychology with his studies of perception (Fechner, 1860), and physician Hermann von Helmholtz (von Helmholtz, 1852, 1863) performed groundbreaking experiments in visual and auditory perception. LINK *to Chapter Three: Sensation and Perception, p. 154.*

*Philosophers: people who seek wisdom and knowledge through thinking and discussion.
**Physiologists: scientists who study the physical workings of the body and its systems.

1.2 *What were the basic ideas of structuralism and functionalism, and who were the important people in those early fields?*

It really all started to come together in a laboratory in Leipzig, Germany, in 1879. It was here that Wilhelm Wundt (VILL-helm Voont, 1832–1920), a physiologist, attempted to apply scientific principles to the study of the human mind. In his laboratory, students from around the world were taught to study the structure of the human mind. Wundt believed that the mind was made up of thoughts, experiences, emotions, and other basic elements. In order to inspect these nonphysical elements, students had to learn to think objectively about their own thoughts—after all, they could hardly read someone else's mind. Wundt called this process **objective introspection**, the process of objectively examining and measuring one's own thoughts and mental activities (Rieber & Robinson, 2001). For example, Wundt might place an object, such as a rock, into a student's hand and have that student tell him everything that he was feeling as a result of having the rock in his hand—all the sensations stimulated by the rock.



German physiologist Wilhelm Wundt participates in an experiment in his laboratory as students look on.

This was really the first attempt by anyone to bring objectivity* and measurement to the concept of psychology. This attention to objectivity, together with the establishment of the first true experimental laboratory in psychology, is why Wundt is known as the "father of psychology."

TITCHENER AND STRUCTURALISM IN AMERICA

One of Wundt's students was Edward Titchener (1867–1927), an Englishman who eventually took Wundt's ideas to Cornell University in Ithaca, New York. Titchener expanded on Wundt's original ideas, calling his new viewpoint **structuralism**, because the focus of study was the structure of the mind. He believed that every experience could be broken down into its individual emotions and sensations (Brennan, 2002). Although Titchener agreed with Wundt that consciousness, the state of being aware of external events, could be broken down into its basic elements, Titchener also believed that the introspection method could be used on thoughts just as it was on physical sensations. For example, Titchener might have asked his students to introspect about things that are blue rather than actually giving them a blue object and asking for reactions to it. Such an exercise might have led to something like the following: "What is blue? There are blue things, like the sky or a bird's feathers. Blue is cool and restful, blue is calm . . ." and so on.

Structuralists would be interested in all of the memories and sensations this woman is experiencing as she smells the rose.

In 1894, one of Titchener's students at Cornell University became famous for becoming the first woman to receive a Ph.D. in psychology (Goodman, 1980; Guthrie, 2004). Her name was Margaret F. Washburn, and she was Titchener's only graduate student for that year. In 1908 she published a book on animal behavior that was considered an important work in that era of psychology, *The Animal Mind* (Washburn, 1908).

Structuralism was a dominant force in the early days of psychology, but it eventually died out in the early 1900s, as the structuralists were busily fighting among themselves over just which key elements of experience were the most important. A competing view arose not long after Wundt's laboratory was established, shortly before structuralism came to America.

Margaret Washburn is shown here in 1926 with other former presidents of the Psychological Society.

*Objectivity: expressing or dealing with facts or conditions as they really are without allowing the influence of personal feelings, prejudices, or interpretations.

objective introspection
the process of examining and measuring one's own thoughts and mental activities.

structuralism
early perspective in psychology associated with Wilhelm Wundt and Edward Titchener, in which the focus of study is the structure or basic elements of the mind.

functionalism
early perspective in psychology associated with William James, in which the focus of study is how the mind allows people to adapt, live, work, and play.

Mary Whiton Calkins, despite being denied a Ph.D. degree by Harvard because she was a woman, became the first female president of the American Psychological Society and had a successful career as a professor and researcher.
Source: Archives of the History of American Psychology–The University of Akron

So what happened next? ▶ Where did psychology go from here?

WILLIAM JAMES AND FUNCTIONALISM

Harvard University was the first school in America to offer classes in psychology in the late 1870s. These classes were taught by one of Harvard's most illustrious instructors, William James (1842–1910). James began teaching anatomy and physiology, but as his interest in psychology developed, he began teaching psychology almost exclusively (Brennan, 2002). His comprehensive textbook on the subject, *Principles of Psychology*, is so brilliantly written that copies are still in print (James, 1890, 2002).

Unlike Wundt and Titchener, James believed that trying to study consciousness was like trying to study the wind. Conscious ideas are constantly flowing in an ever-changing stream, and once you start thinking about what you were just thinking about, what you were thinking about is no longer what you *were* thinking about, it's what you *are* thinking about, and . . . excuse me, I'm a little dizzy. I think you get the picture, anyway.

Instead, James focused on how the mind allows people to *function* in the real world—how people work, play, and adapt to their surroundings, a viewpoint he called **functionalism**. (He was heavily influenced by Charles Darwin's ideas about *natural selection*, in which physical traits that help an animal adapt to its environment and survive are passed on to its offspring, becoming part of the animal's traits.) If physical traits could aid in survival, why couldn't behavioral traits do the same? Animals and people whose behavior helped them to survive would pass those traits on to their offspring, perhaps by teaching or even by some mechanism of heredity.* (Remember that this was early in the days of trying to understand how heredity worked.)

It is interesting to note that one of James's early students was Mary Whiton Calkins, who completed every course and requirement for earning a Ph.D. but was denied that degree by Harvard University because she was a woman. She was allowed to take those classes as a guest only. Calkins eventually established a psychological laboratory at Wellesley College. Her work was some of the earliest research in the area of human memory and the psychology of the self. In 1905, she became the first female president of the American Psychological Society (Furumoto, 1979). Unlike Washburn, Calkins never earned the elusive Ph.D. despite a successful career as a professor and researcher (Guthrie, 2004).

This might be a good place to point out that women were not the only minorities to make contributions in the early days of psychology. In 1920, for example, Francis Cecil Sumner became the first African American to earn a Ph.D. in psychology at Clark University. He eventually became the chair of the psychology department at Howard University and is assumed by many to be the father of African American psychology (Guthrie, 2004). Kenneth and Mamie Clark worked to show the negative effects of school segregation on African American children (Lal, 2002). Hispanic psychologist Jorge Sanchez conducted research in the area of intelligence testing, focusing on the cultural biases in such tests. Since those early days, psychology has seen an increase in all minorities, although the percentages are still far too small when compared to the population at large.

So what happened next? Where did psychology go from here? In the new field of psychology, functionalism offered an alternative viewpoint to the structuralists. But like so many of psychology's early ideas, it is no longer a major perspective. Instead, one can find elements of functionalism in the modern fields of *educational psychology* (studying the application of psychological concepts to education) and *industrial/organizational psychology* (studying the application of psychological concepts to businesses, organizations, and industry), as well as other areas in psychology. LINK *to Appendix B, Applied Psychology.* Functionalism also played a part in the development of one of the more modern perspectives, evolutionary psychology, discussed later in this chapter.

*Heredity: the transmission of traits and characteristics from parent to offspring through the actions of genes.

GESTALT PSYCHOLOGY: THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS

Meanwhile, back in Germany, other psychologists were attacking the concepts of psychology in yet another way. Max Wertheimer (VERT-hi-mer), like James, objected to the structuralist point of view but for different reasons. Wertheimer felt that psychological events such as perceiving* and sensing** could not be broken down into any smaller elements and still be properly understood. You can take a compact disc player apart, for example, but then you no longer have a CD player—you have a pile of unconnected bits and pieces. As a melody is made up of individual notes and can only be understood if the notes are in their correct relationship to one another, so perception can only be understood as a whole, entire event. Hence, the familiar slogan, "The whole is greater than the sum of its parts." The Gestalt psychologists believed that people naturally seek out patterns ("wholes") in the sensory information available to them. See Figure 1.1 for an example of Gestalt perceptual patterns.

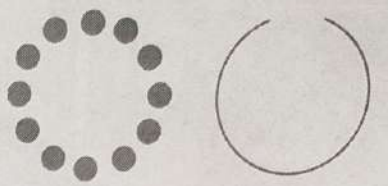


FIGURE 1.1 **A Gestalt Perception** The eye tends to "fill in" the blanks here and see both of these figures as circles rather than as a series of dots or a broken line.

1.3 *What were the basic ideas and who were the important people behind the early approaches known as Gestalt, psychoanalysis, and behaviorism?*

Wertheimer and others devoted their efforts to studying sensation and perception in this new perspective, **Gestalt psychology**. *Gestalt* (Gesh-TALT) is a German word meaning "good form" or "good figure," which fit well with the focus on studying whole patterns rather than small pieces of them. Today, Gestalt ideas are part of the study of *cognitive psychology*, a field focusing not only on perception but also on learning, memory, thought processes, and problem solving; the basic Gestalt principles of perception are still taught within this newer field (Ash, 1998; Kohler, 1992; Wertheimer, 1982). The Gestalt approach has also been influential in psychological therapy, becoming the basis for a major therapeutic technique called *Gestalt therapy*. LINK *to Chapter Fifteen: Psychological Therapies, p. 623.*

SIGMUND FREUD'S PSYCHOANALYSIS

It should be clear by now that psychology didn't start in one place and at one particular time. People of several different viewpoints were trying to promote their own perspective on the study of the human mind and behavior in different places all over the world. Up to now, this chapter has focused on the physiologists who became interested in psychology, and their focus was on understanding consciousness but little else. The medical profession took a whole different approach to psychology.

What about Freud? Everybody talks about him when they talk about psychology. How does he figure into the beginnings of psychology? Sigmund Freud had become a noted physician in Austria while the structuralists argued, the functionalists specialized, and the Gestaltists were looking at the big picture. He was a medical doctor—a neurologist, someone who specializes in disorders of the nervous system—and he and his colleagues had long sought a way to understand the patients who were coming to them for help.

To understand Freud, you have to understand a little about his culture. The late 1800s and early 1900s were the tail end of the "Victorian Age," a time of intense sexual repression. This was a social world in which the word *sex* was never spoken, tables were surrounded by cloth so the bare table "limbs" would not show, and women covered themselves from head to toe in an effort to show as little skin as possible. It is

◀ What about Freud? Everybody talks about him when they talk about psychology. How does he figure into the beginnings of psychology?

Gestalt psychology early perspective in psychology focusing on perception and sensation, particularly the perception of patterns and whole figures.

*Perceiving: becoming aware of something through the senses.

**Sensing: seeing, hearing, feeling, tasting, or smelling something.

understandable that many of the people growing up in this era had problems with sexual thoughts that would be perfectly natural in most modern cultures but were considered unnatural and wicked by Freud's culture. Many of those people, most of them women, ended up in Dr. Freud's office.

Why were so many of his patients women? ▶

Why were so many of his patients women? Although "sex" was considered a forbidden area to both men and women on the surface of Victorian society, men were actually allowed to break the rules—in fact, a good Victorian husband was one who sought out a mistress to meet his "worldly" needs and left his saintly pure wife alone after she had borne him several children (Battan, 1999).

Freud's patients suffered from nervous disorders for which he and other doctors could find no physical cause. Therefore, it was thought, the cause must be in the mind, and that is where Freud began to explore. He proposed that there is an *unconscious* (unaware) mind into which we push, or *repress*, all of our threatening urges and desires. He believed that these repressed urges, in trying to surface, created the nervous disorders in his patients (Freud et al., 1990). LINK *to Chapter Twelve: Theories of Personality, p. 502.*

Freud stressed the importance of early childhood experiences, believing that personality was formed in the first six years of life, and that if there were significant problems, those problems must have begun in those early years.

Some of his more well-known followers were Alfred Adler, Carl Jung, and his own daughter, Anna Freud. Anna Freud began what became known as the ego movement in psychology, a movement that produced one of the most famous psychologists in the study of personality development, Erik Erikson. LINK *to Chapter Seven, Development Across the Life Span, pp. 328–338.*

Freud's ideas are still influential today, although in a somewhat modified form. He had a number of followers in addition to those already named, many of whom became famous by altering his theory to fit their own viewpoint, but his basic ideas are still discussed and debated. LINK *to Chapter Twelve: Theories of Personality, p. 510.*

Freudian **psychoanalysis**, the theory and therapy based on his ideas, has been the basis of much modern *psychotherapy* (a process in which a trained psychological professional helps a person gain insights into and change his or her behavior), but another major and competing viewpoint has actually been more influential in the field of psychology as a whole.

Psychoanalyst Sigmund Freud walks with his daughter Anna, also a psychoanalyst.

psychoanalysis
the theory and therapy based on the work of Sigmund Freud.

behaviorism
the science of behavior that focuses on observable behavior only.

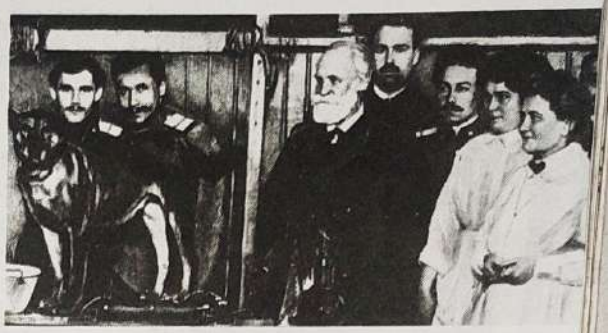
JOHN B. WATSON AND BEHAVIORISM

In the early 1900s, John B. Watson had tired of the arguing among the structuralists; he challenged the functionalist viewpoint, as well as psychoanalysis, with his own "science of behavior," or **behaviorism** (Watson, 1924). Watson wanted to bring psychology back to a focus on scientific inquiry, and he felt that the only way to do that was to ignore the whole "consciousness" issue and focus only on *observable behavior*—something that could be directly seen and measured. He based a lot of his ideas on the work of Russian physiologist Ivan Pavlov.

PAVLOV'S CONDITIONED RESPONSE Pavlov, in his work with dogs, had shown that a reflex (an involuntary reaction) such as salivation, which is normally produced by actually having food in one's mouth, could be caused to occur in response to a totally new and formerly unrelated stimulus,* such as the sound of a bell. He would ring the bell, give the dogs food, and they would salivate. After several rep-

*Stimulus: anything that causes an organism to have a reaction or response.

etitions, the dogs would salivate to the sound of the bell *before* the food was presented—a learned (or "conditioned") reflexive response (Klein & Mowrer, 1989). This process was called *conditioning.* LINK *to Chapter Five: Learning, p. 223.*



Physiologist Ivan Pavlov uses a dog to demonstrate the conditioned reflex to students at the Russian Military Medical Academy.

OF BABIES AND RATS Watson was certainly aware of Freud's work and his views on unconscious repression. Freud believed that all behavior stems from some unconscious motivation, whereas Watson believed that all behavior is learned. Freud had stated that a *phobia*, an irrational fear, is really a symptom of an underlying, repressed conflict, and cannot be "cured" without years of psychoanalysis to uncover and understand the repressed material.

Watson believed that phobias are learned through the process of conditioning and set out to prove it. He took a baby, known as "Little Albert," and taught him to fear a white rat by making a loud, scary noise every time the infant saw the rat, until finally seeing the rat caused the infant to cry and become fearful (Watson & Rayner, 1920). Even though "Little Albert" was not afraid of the rat at the start, the experiment worked very well—in fact, "Little Albert" became afraid of anything white and fuzzy, including white beards and furry rabbit skins. (This was before there were such things as ethics committees. Today, this study would not be permitted because of the potential psychological harm to the child.)

◀ This sounds really bizarre—what does scaring a baby have to do with the science of psychology?

This sounds really bizarre—what does scaring a baby have to do with the science of psychology? Watson wanted to prove that all behavior was a result of a stimulus–response relationship such as that described by Pavlov. At this particular time in history, Freud and his ideas about unconscious motivation were becoming a dominant force, and Watson felt the need to show the world that a much simpler explanation could be found. Although scaring a baby sounds a little cruel, he felt that the advancement of the science of behavior was worth the relatively brief discomfort of the baby. One of Watson's graduate students later decided to repeat Watson and Rayner's study but added training that would "cancel out" the phobic reaction of the baby to the white rat. For more on this research, see the section on Classic Studies in Psychology that follows.

Behaviorism, like psychoanalysis, is still a major perspective in psychology today. It has also influenced the development of other perspectives, such as *cognitive psychology.*

CLASSIC STUDIES IN PSYCHOLOGY

Psychologist Mary Cover Jones and "Little Peter"

Mary Cover was born on September 1, 1897. She graduated from Vassar in 1919 with her bachelor's degree. Rosalie Rayner, John B. Watson's graduate assistant and future wife, was a fellow Vassar graduate and a friend. Mary Cover attended one of Watson's weekend lectures and came away determined to pursue a graduate degree in psychology. Her master's degree was completed in 1920 under the supervision of Watson. In that same year she married another graduate student, Harold Jones (Rutherford, 2000).

Mary Cover Jones was fascinated with the "Little Albert" study and wanted to explore the concept of learned phobias. Beginning with a child known as "Little Peter," Jones began by duplicating Watson and Rayner's 1920 study. She was able to create the same kind of phobic reaction in Peter that had developed in Albert, but she used a white rabbit instead of a rat (Jones, 1924).