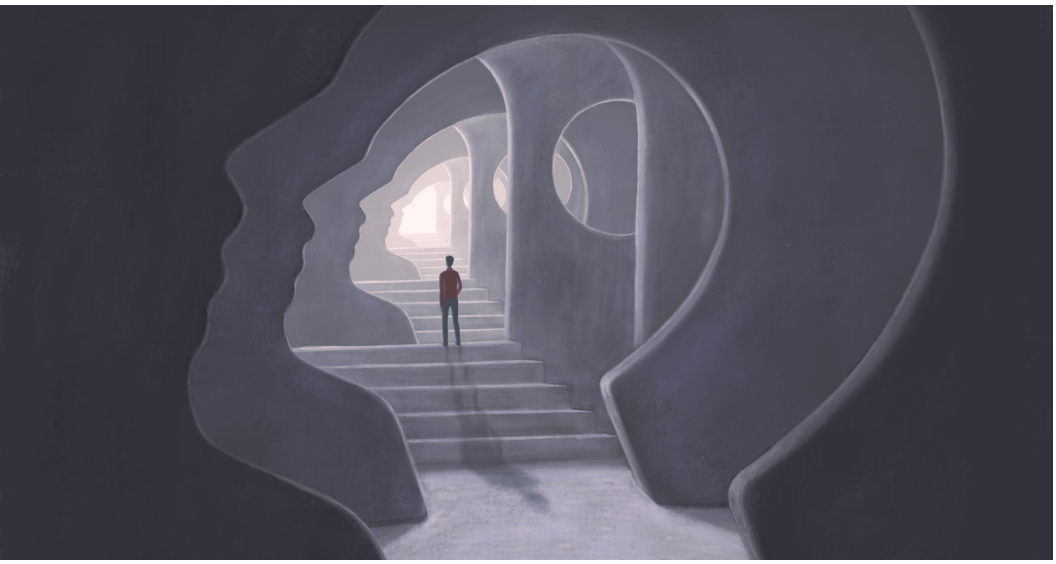
The Nature of Psychology

CHAPTER 1



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Chapter Outline

On May 24, 2022, 19 students and 2 teachers were fatally shot, and 17 others were wounded at Robb Elementary School in Uvalde, Texas, United States, by an 18-year-old former student. Earlier in the day, he had shot and wounded his grandmother at their home. Outside the school, he fired shots for approximately 5 minutes before entering unobstructed with an AR-15 style rifle through an unlocked side entrance door. He then shut himself inside two adjoining classrooms, killed 21 people, and remained in the school for more than an hour before members of the United States Border Patrol Tactical Unit (BORTAC) fatally shot him. The shooter did not have a criminal record and had never received treatment for mental health issues, although he had previously posted violent threats online. According to his classmates and some of his friends, Ramos had a stutter and a strong lisp, for which he was often bullied; he frequently had fistfights with classmates, occasionally with boxing gloves that he carried around with him, and he had few friends. School officials at Uvalde High School withdrew him on October 28, 2021, due to his frequent absences ("Robb Elementary School Shooting," 2022).

The memorial at Robb Elementary School dedicated to the victims of the May 2022 shooting in Uvalde, Texas.

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The issue of school violence has become a pervasive one in the United States. The Uvalde incident was but one in a series of similar incidents—mostly perpetrated by men in their late teens or early 20s—at schools in towns across America. In 2007, the fatal shooting of 32 people by a student at Virginia Tech University became the largest school massacre in American history. Others with large death tolls include Sandy Hook Elementary (Newtown, Connecticut) in 2012 and Marjory Stoneman Douglas High School (Parkland, Florida) in 2018. In fact, such incidents have quadrupled in the past two decades: There were 93 school shootings in 2020–2021, compared to 23 in the 2000–2001 school year (Irwin et al., 2022). School violence and mass shootings of all kinds are of concern to psychologists. What would lead someone to commit a heinous act like these? How can we prevent other incidents like it? How can we help survivors cope with such incidents? The 1999 Columbine High School (Littleton/Denver, Colorado) massacre, for example, led school districts across the United States to ask school psychologists to develop violence-prevention programs and crisis counseling programs for those affected by school violence (Crepeau-Hobson et al., 2005).

The science of *psychology* seeks answers to questions about violence and all other aspects of human and animal behavior. One of your textbook's authors has a friend who is an engineer; he loves to stare at the lighting in a room and ponder how it was built. Your author does not care about that at all (but just hopes that the lights do not fall down!). Instead, psychologists, like all of the authors of this textbook, are interested in how things work inside of us and *why we think, feel, and act the way we do*. Can the effects of brain damage be overcome by the transplantation of brain tissue? Do attachment patterns in infancy predict your adult romantic relationships? Do eyewitnesses give accurate testimony? Can chimpanzees or other nonhuman animals learn to use language and do they have a sense of self? Do lie detectors really work? Can you change your personality? What factors promote interpersonal attraction? These are some of the many questions about human and animal behavior that are answered in this book.

But what is psychology? The word *psychology* was coined in the 16th century from the Greek terms *psyche*, meaning "soul" or "mind," and *logos*, or "the study of a subject." Thus, the initial meaning of *psychology* was "the study of the soul or mind" (Brozek, 1999). This definition reflected the early interest of theologians in topics that are now considered the province of psychologists. Psychology has continued to be defined by its subject matter, which has changed over time. By the late 19th century, when psychology emerged as a science, it had become "the Science of Mental Life" (James, 1890/1981, Vol. 1, p. 15). Beginning in the 1910s, many psychologists—believing that a true science could study only directly observable, measurable events—abandoned the study of the mind in favor of the study of overt behavior. Psychologists moved from studying mental experiences, such as thirst or anger, to studying their observable manifestations, such as drinking or aggression. Consequently, by the 1920s, psychology was commonly defined as "the scientific study of behavior." This definition was dominant until the 1960s, when there was a revival of interest in studying the mind. As a result, **psychology** is now more broadly defined as the science of behavior and cognitive processes and consists of diverse branches and subareas of research (American Psychological Association, n.d.).

psychology The scientific study of behavior and cognitive processes.

What makes psychology a science? Psychology is a science because it relies on the *scientific method* (Holmes & Beins, 2009). Sciences are "scientific" because they share a common set of tools, not because they share a common subject matter. Physics, chemistry, biology, and psychology differ in what they study, yet each uses the scientific method. Whereas a biochemist might use scientific tools to study the unhealthful effects of toxic pollutants on plants or animals, a psychologist might use them to study the behavior or cognitive experiences of a person suffering from major depressive disorder or the impact of the global coronavirus (COVID-19) pandemic. The word *method* is related to the orderly use of tools and is derived from a combination of the Greek words *meta* (following) and *hodos*, or the way. The central role of the scientific method in psychology is discussed at length in Chapter 2.

The Historical Context of Psychology

Psychologists stress the importance of knowing the roots of their discipline, with most academic psychology departments offering a course devoted to the history of psychology (Fuchs & Viney, 2002). Like any other science, psychology has evolved over time and has been influenced by developments in other disciplines and by its social, cultural, and historical contexts. To appreciate the state of psychology today, it is valuable to understand its origins (Danziger, 1994).

The Roots of Psychology

Psychology's historical roots are in philosophy and science/physiology. Though scientists and philosophers alike rely on systematic observation and reasoning as sources of knowledge, philosophers rely more on reasoning alone. For example, a philosopher might logically argue about whether we are ever truly altruistic (that is, completely unselfish) in helping other people, whereas a psychologist might approach this issue by studying the cognitive, emotional, and situational factors that determine the circumstances in which one person will help another (see Chapter 17). When psychologists of the late 19th century began to use the scientific method to study the mind, psychology became an independent scientific discipline (G. Hatfield, 2002).

The Philosophical Roots of Psychology

The roots of psychology reach back to the philosophers of ancient Greece, most notably Plato (c. 428–347 B.C.) and his pupil Aristotle (384–322 B.C.), who were especially interested in the origin of knowledge. Plato noted that our senses can deceive us, as in illusions such as the apparent bending of a straight stick partly immersed in a pool of water. Downplaying knowledge gained through the senses, Plato believed that people enter the world with inborn knowledge—a philosophical position called **nativism**. Plato also believed that we can gain access to inborn knowledge through reasoning, a philosophical position called **rationalism**.

Though Aristotle accepted the importance of reasoning, he was more willing than Plato to accept sensory experience as a source of knowledge—a philosophical position called **empiricism**. Yet he recognized the frailty of sensory data, as in "Aristotle's illusion." To experience this illusion for yourself, cross a middle finger over an index finger and run a pen between them. You will have the inaccurate feeling of two pens instead of one. Aristotle was one of the first thinkers to speculate on psychological topics, as indicated by the titles of his works, including *On Dreams*, *On Sleep and Sleeplessness*, *On Memory and Reminiscence*, and *On the Senses and the Sensed*.

During the early Christian and medieval eras, answers to psychological questions were given more often by theologian philosophers than by secular philosophers like Plato or Aristotle. The dominant Western authority was Saint Augustine (354–430), who lived almost all of his life in what is now Algeria. Augustine wrote of his views on memory, emotion, and motivation in the self-analysis he presented in his classic autobiographical *Confessions*. He also speculated extensively on the nature of dreams (Sirridge, 2005) and anticipated Sigmund Freud by providing insight into the continual battle between our human reason and our animal passions, especially the powerful sex drive (V. Gay, 1986).

During the Middle Ages, when the Christian West was guided largely by religious dogma and those who dared to conduct empirical studies risked punishment, scientific research became almost the sole province of Islamic intellectuals. The most noteworthy of these was the Persian scientist, physician, and philosopher Abu Ibn Sina (980–1037)—better known in the West as Avicenna—who kept alive the teachings of Aristotle (Afnan, 1958/1980). Avicenna also contributed to our knowledge of medicine, even putting forth a theory of the cause of migraine headaches similar to one of the most influential theories today (Abokrysha, 2009).

Plato (c. 428–347 B.C.)
Plato introduced the concepts of nativism and rationalism.
Source: Antonio Abrignani/Shutterstock.com.

nativism The philosophical position that heredity provides individuals with inborn knowledge and abilities.

rationalism The philosophical position that true knowledge comes through correct reasoning.

empiricism The philosophical position that true knowledge comes through the senses.

Visual Illusion
In Chapter 5, you will explore misperceptions of your sensory experiences. In this visual illusion, the physical reality of the pencil bending is caused by the misapplication of visual cues.
Source: Kuki Ladron de Guervara/Shutterstock.com.

Avicenna (980–1037)
A Persian polymath who is regarded as one of the most significant physicians, astronomers, philosophers, and writers of the Islamic Golden Age.
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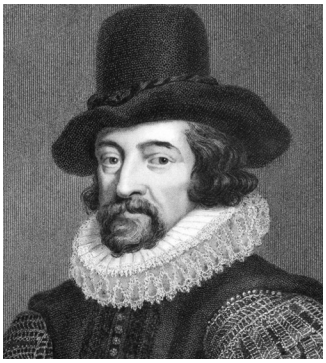
René Descartes (1596–1650)
René Descartes was the first of modern rationalists.
Source: Georgios Kolidas/Shutterstock.com.



Francis Bacon (1561–1626)
Francis Bacon inspired the modern scientific attitude that favors skepticism, systematic observation, and verification of scientific claims by other observers.
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With the coming of the Renaissance, extending from the 14th to the 17th centuries, Western authorities once again relied less on theology and more on philosophy to provide answers to psychological questions. The spirit of the Renaissance inspired René Descartes (1596–1650), the French philosopher-mathematician-scientist and the first of the modern rationalists, who insisted that we should doubt everything that is not proven to be self-evident by our own reasoning. In fact, in his famous statement, "I think, therefore I am," Descartes went to the extreme of using reasoning to prove to his own satisfaction that he existed. Descartes contributed to the modern intellectual outlook, which opposes blind acceptance of proclamations put forth by authorities—religious, political, scientific, or otherwise—unless they are supported by logical arguments (Kisner, 2005). Church leaders felt so threatened by Descartes's challenge to their authority and emphasis of the mind, rather than God, that they put his works on their list of banned books. One of his most famous books, *L'Homme*, can be considered one of the first textbooks of physiology.

Other intellectuals, though favoring empiricism instead of rationalism, joined Descartes in rejecting the authority of theologians to provide answers to scientific questions. Chief among these thinkers was the English politician-philosopher-scientist Francis Bacon (1561–1626). Bacon inspired the modern scientific attitude that favors skepticism, systematic observation, and verification of scientific claims by other observers (Hearnshaw, 1985). He also was a founder of applied science, which seeks practical applications of research findings. In support of applied science, Bacon asserted, "to be useless is to be worthless." Following in Bacon's empiricist footsteps was the English philosopher John Locke (1632–1704). According to Locke (borrowing a concept from Aristotle), each of us is born with a blank slate—or *tabula rasa*—on which are written the life experiences we acquire through our senses. Whereas nativists such as Descartes claim that much of our knowledge is inborn, empiricists such as Locke believe that knowledge is acquired solely through life experiences (Gaukroger, 2009).

Because Locke's views were incompatible with the belief in the inborn right of certain people to be rulers over others, you can appreciate why Locke's writings helped inspire the American and French Revolutions. This *nature vs nurture* debate, a recurring theme in psychological theory and research, appears later in this book in discussions about a host of topics, including language, intelligence, personality, and psychological disorders.

The Physiological Roots of Psychology

By the 19th century, physiologists were making progress in answering questions about the nature of psychological processes that philosophers could not elucidate. As a consequence, intellectuals began to look to physiology for guidance in the study of psychological topics. For example, in the mid-19th century, popular belief, based on reasoning, held that nerve (a bundle of axons outside the central nervous system as we know it now; see Chapter 3) impulses travel the length of a nerve as fast as electricity travels along a wire—that is, almost instantaneously—and were too fast to measure. This claim was contradicted by research conducted by the German physiologist Hermann von Helmholtz (1821–1894), one of the premier scientists of the 19th century (D. Cahan, 2006). In studying nerve impulses, Helmholtz (see Chapter 5) found that they took a measurable fraction of a second to travel along a nerve. In one experiment, he had participants release a telegraph key as soon as they felt a touch on the foot or thigh. Participants reacted more slowly to a touch on the foot than to a touch on the thigh, presumably because of the longer distance that nerve impulses must travel from the foot to the spinal cord and then on to the brain. In fact, Helmholtz found that human nerve impulses traveled at the relatively slow speed of 50 to 100 meters per second.

Helmholtz's scientific contemporaries made important discoveries about brain functions that likewise could not have been discovered by philosophical speculation alone. French physiologist Pierre Flourens (1794–1867), the founder of scientific research on the localization of brain functions (Pearce, 2009), observed that damage to the cerebellum, a large structure at the back of the brain, caused motor incoordination. Animals with damage to the cerebellum would walk as though they were drunk. This study led Flourens to conclude, correctly, that the cerebellum helps regulate the coordination of movements.

Another notable researcher of these times was the German mystic-physician-scientist Gustav Fechner (1801–1887). In his scientific research, Fechner used the methods of **psychophysics**; Fechner, inspired to do so by a daydream, used psychophysical methods to quantify the relationship between physical stimulation and the mental experience of sensation (Heidelberger, 2004).

Psychophysics considers questions such as these: How much change in the intensity of a light is necessary for a person to experience a change in its brightness? And how much change in the intensity of a sound is necessary for a person to experience a change in its loudness? (And at exactly what point does your loud roommate become annoying?) Psychophysics contributed to psychology's maturation from being a child of philosophy and physiology to being an independent discipline with its own subject matter, and it has had important applications. For example, the researchers who perfected television relied on psychophysics to determine the relationship between physical characteristics of the television picture and the viewer's mental experience of qualities such as color and brightness (M. W. Baldwin, 1954).

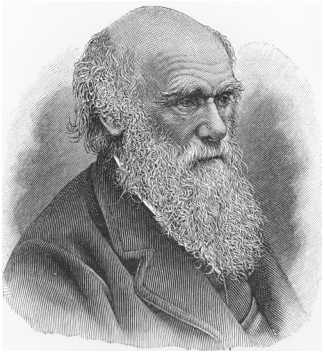
Psychologists of the late 19th century also were influenced by the theory of evolution put forth by the English naturalist Charles Darwin (1809–1882). *The Origin of Species* (Darwin, 1859/1975) described the results of research he conducted while studying plants and animals during a 5-year voyage around the world on HMS *Beagle*. Though thinkers as far back as ancient Greece had proposed that existing animals had evolved from common ancestors, Darwin, along with fellow English naturalist Alfred Russell Wallace (Padian, 2008), was the first to propose a systematic process that could account for it. Through *natural selection*, physical characteristics that help you survive are more likely to be passed on to your offspring and beyond, because individuals with these characteristics live long enough to reproduce and make copies of their genes.

Darwin's theory had its most immediate impact on psychology through the work of his cousin, the English scientist Francis Galton (1822–1911). Galton argued that natural selection could account for the development of human abilities, such as vision and hearing, and led him to found the field of **differential psychology** (A. R. Buss, 1976), which studies variations among people in physical, personality, and intellectual attributes. Galton's impact on the study of intelligence is discussed in Chapter 10.

Hermann von Helmholtz (1821–1894)
Through experimentation, Hermann von Helmholtz developed seminal theories on vision and hearing.
Source: Nicku/Shutterstock.com.

psychophysics The study of the relationship between the physical characteristics of stimuli and the conscious psychological experiences that are associated with them.

differential psychology The field of psychology that studies individual differences in physical, personality, and intellectual characteristics.



Charles Darwin (1809–1882)
Charles Darwin's key theories guide modern psychology; see Contemporary Perspectives in Psychology.
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The Founding Schools of Psychology

Differential psychology was introduced to North America by the psychologist James McKeen Cattell (1860–1944), who had studied with Galton in England. In 1890, Cattell coined the term *mental test*, which he used to describe various tests of vision, hearing, and physical skills that he administered to his students. James McKeen Cattell became the first psychology professor in the world (that is, the first person to hold such a position independent of an academic biology or philosophy department) when he took a position at the University of Pennsylvania in 1889. Hermann Ebbinghaus (1850–1909), a pioneer in psychology, asserted that "psychology has a long past, but only a short history" (quoted in Boring, 1950, p. ix). By this, he meant that, although intellectuals have been interested in psychological topics since the era of ancient Greece (and likely since the dawn of time), psychology did not become a separate academic discipline until the late 19th century.

Psychologists commonly attribute the founding of this new discipline to the German physiologist Wilhelm Wundt (1832–1920). In 1875, Wundt set up a psychology laboratory at the University of Leipzig in a small room that had served as a dining hall. Wundt's request for a more impressive laboratory had been rejected by the school's administrators, who did not want to promote a science they believed would drive students crazy by encouraging them to scrutinize the contents of their minds (Hilgard, 1987). Beginning in 1879, Wundt's laboratory became the site of formal research conducted by many students who later became some of the most renowned psychologists in the world. Wundt and his students conducted research on topics such as attention, sensation, and reaction time. More than 30 American psychologists, including Cattell, earned their Ph.D. with Wundt

American Psychological Association

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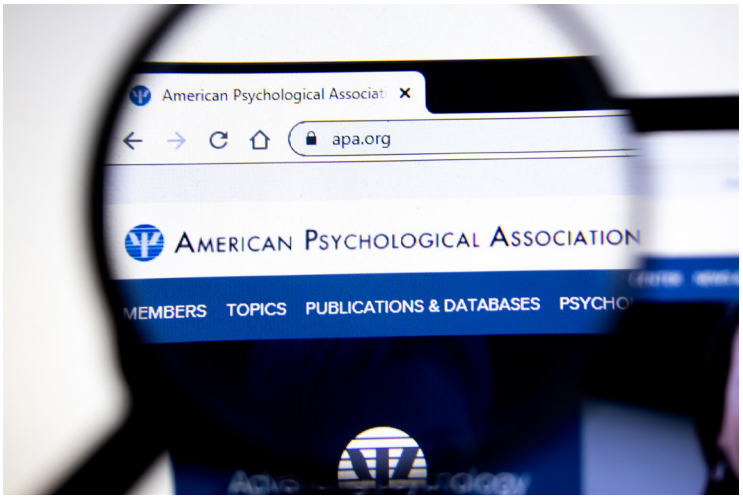

Wilhelm Wundt (1832–1920)

Wilhelm Wundt established the first psychology laboratory at the University of Leipzig in 1875.

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(L. T. Benjamin et al., 1992). These students also included G. Stanley Hall (1846–1924), who founded the American Psychological Association in 1892. The growth of the new science was marked by the rise of competing intellectual schools of psychology championed by charismatic leaders, who often were trained in both philosophy and physiology. These earliest schools were *structuralism* and *functionalism*.

Structuralism

The first approach—**structuralism**—arose in the late 19th century, championed by European psychologists inspired by the efforts of biologists, chemists, and physicists to analyze matter into cells, molecules, and atoms. Following the lead of these scientists, structuralists tried to analyze the mind into its component elements and discover how the elements interact. Structuralism was named and popularized by Wundt's student Edward Titchener (1867–1927). Titchener, born in England, introduced structuralism to the United States after receiving his Ph.D. from Wundt in 1892 and then joining the faculty of Cornell University later that year.

structuralism The early psychological viewpoint that sought to identify the components of the conscious mind.

To study the mind, he had his participants use **analytic introspection**, a procedure aimed at analyzing complex mental experiences into what he believed were the three basic mental elements: images, feelings, and sensations. In a typical study using analytic introspection, Titchener would present a participant with a stimulus (for example, a repetitive sound) and then ask the participant to report the images, feelings, and sensations evoked by it. Based on his research, Titchener concluded that there were more than 40,000 mental elements, with the great majority of them visual in nature (Lieberman, 1979).

analytic introspection A research method in which highly trained participants report the contents of their conscious mental experiences.

Among Titchener's contributions was research on the sense of taste, which found that even complex tastes are mixtures of four basic tastes of sour, sweet, salty, and bitter (Webb, 1981). Despite Titchener's renown, structuralism declined in its influence because it was limited to the laboratory. In fact, Titchener frowned on psychologists who tried to apply the new science of psychology to everyday life (S. H. White, 1994).

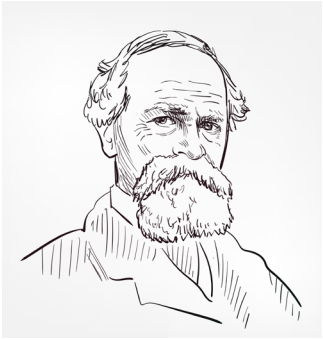
Functionalism

Functionalism arose in America chiefly as a response to structuralism. Functionalists criticized the structuralists for limiting themselves to introspection and to analyzing the contents of the mind. The functionalists preferred, instead, to study how the mind affects what people do. Whereas structuralists might study the mental components of tastes, functionalists might study how the ability to distinguish different tastes affects behavior. This approach reflected the influence of Darwin's theory of evolution, which stressed the role of inherited characteristics in helping the individual adapt to their environment. The functionalists assumed that our mind evolved because it promoted our survival. Your conscious mind permits you to evaluate your current circumstances and select the best

functionalism The early psychological viewpoint that studied how the conscious mind helps the individual adapt to the environment.

course of action to adapt to them. Recall a time when you tasted food that had gone bad. You quickly spit it out, vividly demonstrating the functional value of our sense of taste.

The most prominent functionalist was the American psychologist and philosopher William James (1842–1910). In his approach to psychology, James viewed the mind like a stream of water, which cannot be meaningfully broken down into discrete elements. Thus, he believed that the mind—or *stream of consciousness*—is not suited to the kind of analytic study favored by structuralists. In 1875, the same year that Wundt established his laboratory at Leipzig, James established a psychology laboratory at Harvard University. But unlike Wundt, James used the laboratory for demonstrations, not for experiments. Instead, he urged psychologists to study how people function in the world outside the laboratory. His classic textbook, *The Principles of Psychology* (James, 1890/1981), highlighted the interrelationship of philosophy, physiology, and psychology, and it remains one of the few psychology books from that era still in print. James also contributed a theory of emotion (discussed in Chapter 12) that endures to this day (Palencik, 2007).



William James (1842–1910)
William James helped establish psychology as a science and mentored Mary Whiton Calkins, a key figure in the history of women psychologists.
Source: Natata/Shutterstock.com.

As a group, the functionalists broadened the range of subjects and participants used in psychological research by including animals, children, and people with psychological disorders. They also expanded the subject matter of psychology to include such topics as memory, thinking, and personality. And they applied their research to everyday life. For example, John Dewey (1859–1952) applied psychology to the improvement of educational practices and remains an influential intellectual figure in educational and developmental psychology (Fallace, 2010).

Of course, like many scientific disciplines, psychology was overwhelmingly dominated by men of European descent, although that is changing rapidly today thanks in part to people who paved the way. For example, Mary Whiton Calkins (1863–1930) was the first prominent female psychologist. In 1903, Calkins, along with Margaret Floy Washburn, the leading animal psychologist of her time, and Christine Ladd-Franklin, who put forth an early theory of color vision, was included in James McKeen Cattell's influential list of the 50 most eminent American psychologists (O'Connell & Russo, 1990). But being one of William James's students did not guarantee Calkins an easy path to a career as a psychologist (Furumoto, 1980) because Harvard did not permit women to enroll as matriculated students. Though Calkins completed all the coursework and the doctoral dissertation required for a doctoral degree, Harvard's administration refused to award her Ph.D. in 1896 despite James's endorsing "the most brilliant examination for the Ph.D. that we have had at Harvard." Psychologists and student activists have continued to submit proposals to the Harvard administration for a posthumous Ph.D. to be awarded to Calkins but to date have not been successful (Boatwright & Nolan, 2005).

Despite never receiving her doctorate, Calkins became a successful psychologist. She founded the psychology laboratory at Wellesley College, began the scientific study of dreams, invented the paired-associate technique of assessing memory, and wrote one of the first introductory psychology textbooks (Calkins, 1901). She spent most of her career developing her theory of self psychology, which viewed psychology as the empirical study of the person in conscious interaction with the environment (D. N. McDonald, 2007). In 1905, she became the first female president of the American Psychological Association. Calkins would be pleased that today more women than men now earn doctoral degrees in psychology (Fowler et al., 2018). Whereas this is a sign of progress, women still face wage gaps and other gender inequalities as they enter the workforce (Clay, 2017).

The Growth of Psychology

Structuralism and functionalism were soon joined by other intellectual schools of psychology, which included *Gestalt psychology*, *psychoanalysis*, and *behaviorism*. These schools broadened the subject matter, methodology, and applications of psychology. Though they were somewhat influenced by structuralism and functionalism, they became more influential than those two founding schools.

Gestalt Psychology

Gestalt psychology The early psychological viewpoint that claimed that we perceive and think about wholes rather than simply combinations of separate elements.

The structuralists' attempt to analyze the mind into its component parts was countered by the German psychologist Max Wertheimer (1880–1943), who founded **Gestalt psychology**. Wertheimer used the word *gestalt*, meaning "form" or "shape," to underscore his belief that we perceive wholes rather than combinations of individual elements. A famous tenet of Gestalt psychology asserts that "the whole is different from the sum of its parts" (Wertheimer & King, 1994). Because of this basic assumption, Wertheimer ridiculed structuralism as "brick-and-mortar psychology" for its attempt to analyze mental experience into discrete elements.

Psychoanalysis

psychoanalysis The early school of psychology that emphasized the importance of unconscious causes of behavior.

Unlike the other early approaches to psychology, which originated in universities, **psychoanalysis** originated in medical science. Sigmund Freud (1856–1939) was an Austrian neurologist who considered himself "a conquistador of the mind" (Gay, 1988). Freud noted that his theory, which views the human species as animals first and foremost, owed a debt to Darwin's theory of evolution. Psychoanalysis grew, in part, from Freud's attempts to treat patients suffering from physical symptoms, such as paralyzed legs, inability to speak, or loss of body sensations, that had no apparent physical causes. Based on his treatment of patients suffering from such symptoms of conversion hysteria (now called functional neurological symptom disorder), Freud concluded that the disorder was the result of unconscious psychological conflicts of which the individual was unaware (Guttman, 2006). These mental conflicts were "converted" into the physical symptoms seen in conversion hysteria. Stay tuned for more on Freudian psychology and its adaptations in Chapters 6, 13, 14, and 15.

"It goes back to being pulled out of the hat."

Psychoanalysis

Sigmund Freud established psychoanalysis.

Source: Cartoon Resource/Shutterstock.com.

Psychoanalysis has been subjected to criticism for failing to provide adequate research evidence for its claims (Dufresne, 2007). Freud's theory in particular focuses on the male experience and thus has less relevance to women's lives (Masling et al., 2002). Moreover, Freud never tested his theory experimentally. Instead, he based his theory on notes written after seeing patients, which made his conclusions subject to his own memory lapses and personal biases (see Chapter 2). And Freud violated good scientific practice by generalizing to all people the results of his case studies of a relative handful of people with psychological disorders.

Behaviorism

behaviorism The psychological viewpoint that rejects the study of mental processes in favor of the study of overt behavior.

In 1913, a leading functionalist published an article entitled "Psychology as the Behaviorist Views It," which described psychology as "a purely objective experimental branch of natural science" with its theoretical goal being the prediction and control of behavior (J. B. Watson, 1913, p. 158). This bold statement by the American psychologist John B. Watson (1878–1958) heralded the rise of **behaviorism**, an approach to psychology that dominated the discipline for half a century. He was influenced by Russian physiologist Ivan Pavlov (1849–1936), whose work he helped introduce to North America (Buckley, 1989). Watson rejected the position shared by structuralists, functionalists, Gestalt psychologists, and psychoanalysts that the mind is the proper object of study for psychology.

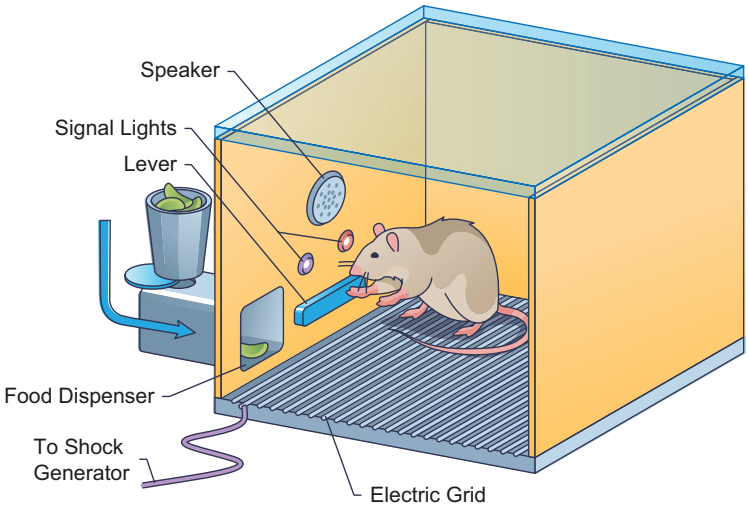
To Watson, the optimal subject matter for psychological research was observable behavior. Unlike mental experiences, overt behavior can be recorded and subjected to verification by other scientists. For example, psychologists might study the mental experience of hunger, but behaviorists would prefer to study the observable behavior of eating. Watson impressed his fellow psychologists enough to be elected president of the American Psychological Association in 1915. Though he wrote about both heredity and environment, he placed great faith in the effect of environmental stimuli on the control

of behavior, especially children's behavior (F. D. Horowitz, 1992). Watson's "stimulus-response" psychology placed him firmly in the empiricist tradition of John Locke and is best expressed in his famous pronouncement on child development:

> *Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief and, yes, even beggar man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors.* (J. B. Watson, 1930, p. 104)

Apparently, no parents rushed to offer their infants to be trained by Watson. Nonetheless, his views on child rearing became influential. Despite some of their excessive claims, behaviorists injected optimism into psychology by fostering the belief that people are minimally limited by heredity and easily changed by experience. In favoring nurture over nature, behaviorists assumed that people, regardless of their hereditary background, could improve themselves and their positions in life. Watson and his fellow behaviorists were more than willing to suggest ways to bring about such improvements. Watson (and later Skinner) even hoped to establish a utopian society based on behavioral principles (Morawski, 1982).

Watson's intellectual descendent was the American psychologist B. F. Skinner (1904–1990). As a young man, Skinner pursued a career as a writer and even spent 6 months living in Greenwich Village, New York, to soak up its creative Bohemian atmosphere. After discovering that he was not cut out to be a fiction writer and being excited by the writings of John B. Watson, Skinner decided to become a psychologist (Keller, 1991). Though he eventually became a prominent figure in 20th-century psychology, second only to Sigmund Freud (Rutherford, 2000), it took many years for him to achieve that standing. His landmark book, *The Behavior of Organisms* (which had been published in 1938), sold only 80 copies by the end of World War II in 1945. Like Watson, Skinner urged psychologists to ignore mental processes and to limit psychology to the study of observable behavior. In contrast to Watson, however, Skinner stressed the role of the *consequences* of behavior in controlling it, noting that animals and people tend to repeat behaviors that are followed by good things. If your studying (a behavior) pays off with a high grade on an exam (a positive consequence), you will be more likely to study in the future. In Skinner's terms, your behavior has been "positively reinforced."



Skinner Box

A Skinner Box, now more commonly known as an operant box or chamber, is a laboratory apparatus for studying animal behavior and responses to conditioning.

Source: VectorMine/Shutterstock.com.

Skinner, like Watson, was a utopian. In 1948, Skinner—showing that he did, in fact, have the ability to write fiction—published *Walden Two*, a novel that describes an ideal society based on behaviorist principles. In Skinner's utopia, benevolent behaviorists control the citizens by providing positive consequences for desirable behaviors. Several communities, most notably Twin Oaks in Louisa, Virginia, and Los Horcones near Hermosillo, Mexico, were founded on principles presented in *Walden Two* (Kuhlmann, 2005). Though there is still no behavioral utopia, the behavioral perspective has contributed to improvements in education, child rearing, industrial productivity, and therapy for psychological disorders. These topics are discussed in later chapters.

Behaviorism dominated psychology through the 1960s (O'Neil, 1995). In fact, from 1930 to 1960, the term *mind* rarely appeared in psychological research articles (C. G. Mueller, 1979). But since then, the mind has returned as a legitimate object of study. The weakened influence of orthodox behaviorism is also shown by renewed respect for the constraints that heredity places on learning (a topic discussed in Chapter 7). Growing

TABLE 1-1 Major Psychological Perspectives

Perspective	Object of Study	Goal of Study	Method of Study
Structuralism	Conscious experience	Analyzing the structure of the mind	Analytic introspection
Functionalism	Conscious experience	Studying the functions of the mind	Introspection and testing
Gestalt	Conscious experience	Demonstrating the active, holistic nature of the mind	Introspection and demonstrations
Psychoanalysis	Unconscious motivation	Studying unconscious motives of behavior	Clinical case studies
Behaviorism	Observable behavior	Controlling behavior	Observation and experiments

dissatisfaction with the lack of attention that orthodox behaviorists give to cognitive processes has prompted some behaviorists to study the relationship between cognitive processes such as thoughts or mental images, which cannot be directly observed, and overt behavior, which can. These psychologists are called cognitive behaviorists. One of their most influential leaders was Albert Bandura (2001), who has noted that we can learn by observing as well as by doing. The views of Skinner and Bandura are discussed further in Chapters 7, 14, and 15. Despite the rise of cognitivism, behaviorism remains a powerful force in psychology today (Leigland, 2000).

Table 1-1 summarizes the major characteristics of the early perspectives of psychology.

Section Review: The Historical Context of Psychology

1. How did the work of 19th-century scientists lead to the emergence of psychology as a science?
2. What were the contributions of functionalism to psychology?
3. What was Gestalt psychology's main criticism of structuralism?
4. What prompted the emergence of behaviorism?

Contemporary Perspectives in Psychology

scientific paradigm A model that determines the appropriate goals, methods, and subject matter of a science.

According to Thomas Kuhn (1970), an influential American philosopher, as a science matures, it develops a unifying **scientific paradigm**, or model, that determines its appropriate goals, methods, and subject matter. However, as you have just read, psychology has been influenced by different approaches, and the discipline still lacks a unifying scientific paradigm to which most psychologists subscribe (L. A. Shapiro, 2005). Instead, the past seven decades have seen the emergence of four highly influential new perspectives—the *humanistic perspective*, the *cognitive perspective*, the *biopsychological perspective*, and the *sociocultural perspective*.

The Humanistic Perspective

humanistic perspective The psychological viewpoint that holds that the proper subject matter of psychology is the individual's subjective mental experience of the world.

Because it provided the first important alternative to the highly influential psychoanalytic and behavioral perspectives, the **humanistic perspective** has been called the "third force" in psychology (Cosgrove, 2007). It was founded in the 1950s by the American psychologists Abraham Maslow (1908–1970) and Carl Rogers (1902–1987) to promote

the idea that people have free will and are not merely pawns in the hands of unconscious motives or environmental stimuli. Maslow, who served as president of the American Psychological Association in 1967, had begun as a behaviorist but later rejected what he saw as behaviorism's narrow focus on observable behavior and the effects of the environment. He stressed people's natural tendency toward *self-actualization*, which was his term for the fulfillment of one's potentials.

Rogers echoed Maslow, and both assumed that the subject matter of psychology should be the individual's unique subjective mental experience of the world. In favoring the study of mental experience, Maslow and Rogers showed their intellectual kinship to William James. This study of subjective mental experience is the overriding focus of the branch of humanistic psychology called **phenomenological psychology**. These psychologists might study the mental experience of depression (Slavik & Croak, 2006) as opposed to behaviors exhibited by depressed people or the brain factors or unconscious motives that may underlie depressive disorders. And humanistic psychology's assumption that people have free will is central to **existential psychology**. This branch of humanistic psychology favors the study of how people respond to the basic givens of reality, including the responsibility of personal freedom, the isolation of one person from another, the need to find meaning in one's life, and the realization that we will all eventually die (Yalom, 1980).

phenomenological psychology A branch of humanistic psychology primarily concerned with the study of subjective mental experience.

existential psychology A branch of humanistic psychology that studies how individuals respond to the basic philosophical issues of life, such as death, meaning, freedom, and isolation.

The Cognitive Perspective

In his presidential address to the American Psychological Association, Wolfgang Köhler (1959) urged Gestalt psychologists and behaviorists to create a psychology that included the best aspects of both their schools. Psychologists who favor the *cognitive approach* have followed Köhler's advice (H. A. Simon, 1995), beginning with the "cognitive revolution" in psychology that started in the late 1950s, largely provoked by the perceived shortcomings of behaviorism (Proctor & Kim-Phuong, 2006). Like Gestalt psychologists, **cognitive psychology** stresses the active role of the mind in organizing perceptions; thinking; forming memories, attention, and language; and interpreting experiences. This **cognitive perspective** shifted away from the study of behavior or psychoanalysis in favor of understanding human information processing. And like behavioral psychologists, cognitive psychologists stress the need for objective, well-controlled, laboratory studies. Thus, cognitive psychologists infer the presence of cognitive processes from observable responses without relying on verbal reports alone.

cognitive psychology The field of psychology that studies cognitive processes such as thought and language.

cognitive perspective The psychological viewpoint that favors the study of how the mind organizes perceptions, processes information, and interprets experiences.

The cognitive perspective is illustrated in the work of the Swiss biologist-psychologist Jean Piaget (1896–1980), who put forth a cognitive theory of the child's mental development based on his interviews with children as they solved various problems (Chandler, 2009). Piaget's research is discussed in Chapter 4. The cognitive perspective also has been influenced by the computer revolution that began in the 1950s, which stimulated research on the human brain as an information processor. Some cognitive psychologists use computer programs to create models of human thought processes; others use their knowledge of human thought processes to improve computer programs, like those for computer chess games.

Beginning about 1980, the cognitive perspective surpassed the behavioral perspective and the psychoanalytic perspective in its influence on psychology (Robins et al., 1999). As you will realize while reading upcoming chapters, the cognitive perspective pervades almost every field of modern psychology. For example, the concept of cognitive schemas, or specialized knowledge structures, has been applied to the study of human development, memory, thought and language, social behavior, and personality, and cognitive-behavioral therapy (CBT) is the top treatment for most psychological disorders today.

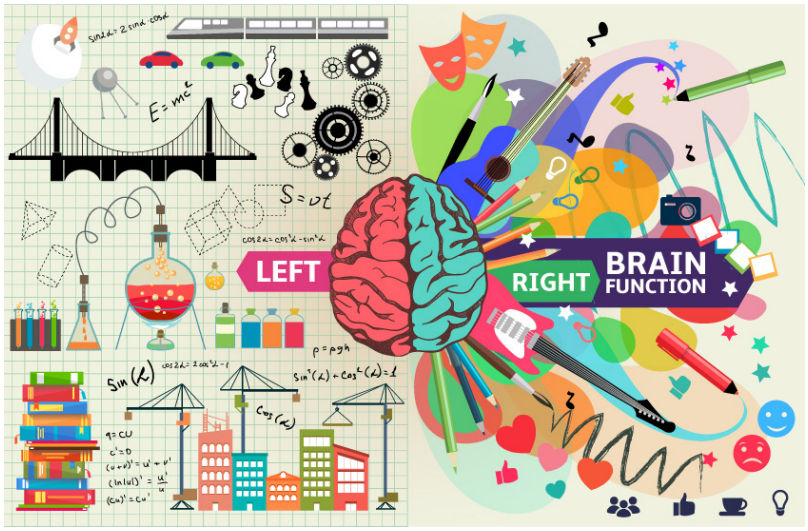
The Biopsychological Perspective

Although several of the early approaches to psychology had their roots in 19th-century physiology, until relatively recently there was never a strictly biopsychological approach to psychology. But growing interest in the biological basis of behavior and cognitive

Left brain versus right brain, right?

Human and animal brains have somewhat different psychological functions in different areas or lobes and this is called hemispheric lateralization. However, it is largely a neuromyth that cognitive functions are neatly organized and that some people are "left-brained," whereas others are "right-brained." Evidence is accumulating that activity is similar on both sides of the brain regardless of your personality or learning style (J. A. Nielsen et al., 2013). You use both sides of your brain all the time!

Source: Ksyu Deniska/Shutterstock.com.



biopsychological perspective The psychological viewpoint that stresses the relationship of physiological factors to behavior and cognitive processes. This perspective can also be called physiological psychology, psychobiology, or behavioral neuroscience.

processes, combined with the development of sophisticated research equipment, has led to the emergence of a **biopsychological perspective**. Psychologists who favor this perspective are interested in studying the brain, the hormonal system, and the effects of heredity on psychological functions. Though most biopsychology researchers rely on animals as subjects, many important studies have used human participants. For example, in the course of surgery on the brains of epilepsy victims to reduce their seizures, the Canadian neurosurgeon Wilder Penfield (1891–1976) mapped the human brain by using weak electrical currents to stimulate points on its surface. He found that stimulation of particular points on one side of the brain caused movements of particular body parts on the opposite side. Most *behavioral neuroscientists* or *cognitive neuroscientists* favor this approach to psychology.

One branch of the biopsychological perspective is cognitive neuroscience, which studies topics such as the neurological bases of emotional memory (LaBar & Cabeza, 2006), mental giftedness (Kalbfleisch, 2008), and attention deficit hyperactivity disorder (Vaidya & Stollstorff, 2008). Use of functional MRI (fMRI) to provide scans of ongoing brain activity has helped advance research in cognitive neuroscience (Poldrack & Wagner, 2008) and behavioral neuroscience. In 1981, the American biopsychologist Roger Sperry (1913–1994) was awarded a Nobel Prize for his studies of the functions of the left and right brain hemispheres of treatment-resistant epilepsy patients whose hemispheres had been surgically separated to reduce their seizures (Berlucchi, 2006). This type of procedure, known as a *split-brain*, disconnected the corpus callosum. After the surgery, patients had reduced seizures, but the two hemispheres operated independently. Chapter 3 describes the research of Penfield, Sperry, and other contributors to biopsychology. Because of the increasing influence of this perspective, psychology might be moving toward an even broader definition as "the science of behavior and cognitive processes, and the physiological processes underlying them."

Split-Brain Procedure

The human brain has two hemispheres connected by the corpus callosum (highlighted). The left image is an anterior view of the brain and the right image is a lateral, or side, view of the brain. Symptoms of treatment-resistant epilepsy can be reduced by a procedure known as the split-brain procedure.

Source: decade3d-anatomy online/Shutterstock.com.

behavioral genetics The study of the relative effects of heredity and life experiences on behavior.

Some biopsychologists work in the field of **behavioral genetics**, which studies the relative influence of hereditary and environmental factors on human and animal behavior, such as the genetic bases of autism (Moy & Nadler, 2008) and depression (J. J. Crowley & Lucki, 2006). Chapter 3 discusses the use of behavioral genetics in explaining differences in human intelligence and personality. Many of those who study the role of heredity rely on Charles Darwin's theory of evolution as the inspiration for their research. They champion the relatively new approach, based upon Darwinian principles and descended

from functionalism, called **evolutionary psychology** (L. Barker, 2006). For example, evolutionary psychologists interpret some gender differences in social behavior to be the product of natural selection (Nicolson, 2002), in which traits and behaviors that have had survival value humans passed from generation to generation.

evolutionary psychology The study of the evolution of behavior through natural selection.

The Sociocultural Perspective

Though Wilhelm Wundt is most famous for founding psychology as a laboratory science, he stressed the importance of considering sociocultural influences on human psychology (E. D. Cahan & White, 1992). In fact, his 10-volume *Folk Psychology*, which was published during the years 1900 to 1920, anticipated the **sociocultural perspective**. This perspective has developed as a reaction against what its proponents believe is the unfortunate tendency to presume that psychological research findings, obtained chiefly from research conducted in Europe and North America, are always generalizable to other cultures and other social groups (more on this in Chapter 2). As two leading sociocultural psychologists have commented:

sociocultural perspective The psychological viewpoint that favors the scientific study of human behavior in its sociocultural context.

> *The typical psychology text contains hundreds of concepts, terms, and theories. . . . Most of these abstractions are used as if it has already been established that they are applicable everywhere. This is a premature if not dangerous assumption to make.* (Lonner & Malpass, 1994, p. 2)

Throughout this textbook, you will read about studies that have attempted to determine whether research findings obtained in one culture are, in fact, applicable to other cultures. Also, you will learn about research on the influence of sociocultural variables such as gender, ethnicity, and sexual orientation on the many aspects of human behavior and thought processes studied by psychologists. Harry Triandis (1990), one of the founders of the sociocultural perspective, takes a position that would be favored by functionalists. He suggests that we avoid ethnocentrism (viewing other cultures by using our own as the ideal standard of comparison) and, instead, view each culture as the outcome of attempts by its members to adapt to particular ecological niches. Then we would realize that, had we been born in another culture, our behavior and our views about what is normal and desirable might fit that culture's norms more closely than our own.

What has accounted for the relatively recent surge of interest in the sociocultural perspective? Perhaps the greatest influence has been the "shrinking" of our planet. Today people on opposite sides of the world can communicate instantly with one another using a variety of means, including phones and the Internet. Other factors include tourism, immigration, international trade, and ethnic conflict. Thus, it behooves people from different cultures to better understand one another.

Proponents of the sociocultural perspective take a variety of approaches to conducting their research. Some study **cross-cultural psychology**. Cross-cultural psychologists employ research methods designed to compare two or more cultures in an attempt to discover the degree to which psychological principles can be generalized across those cultures. Cross-cultural psychologists study topics such as sociocultural factors involved in eating habits (Rozin, 2005), attitudes toward psychotherapy (Digiuni et al., 2013), and psychological disorders such as depression in elderly women and men (Tiedt, 2013). One of the central issues in cross-cultural psychology is *relativism* vs *universalism*. Whereas relativists stress the importance of identifying psychological differences across cultures and celebrating these differences, universalists stress the importance of identifying psychological commonalities across cultures and universal phenomena—that is, figuring out what is the same for all humans.

cross-cultural psychology An approach that tries to determine the extent to which research findings about human psychology hold true across cultures.

The sociocultural perspective has also given rise to **multicultural psychology**, which studies psychological similarities and differences across the subcultures that commonly exist within individual countries. For example, the American Psychological Association and the American Counseling Association formally support training of all psychologists in multicultural competencies so they can work more effectively with clients from diverse cultural backgrounds (Cokley & Rosales, 2005).

multicultural psychology The field that studies psychological similarities and differences across the subcultures that commonly exist within individual countries.

cultural psychology An approach that studies how cultural factors affect human behavior and mental experience.

ethnic psychology The field that employs culturally appropriate methods to describe the experience of members of groups that historically have been underrepresented in psychology.

Other psychologists believe that we should be most concerned with studying how culture influences human behavior and cognitive processes. This approach is called **cultural psychology**, which includes, for example, research on how culture influences child development (Quintana et al., 2006). A related field, **ethnic psychology**, employs sociocultural methods to describe the experience of members of groups that have been historically underrepresented in psychology. For example, psychologists Mamie Phipps Clark, Kenneth B. Clark, and William E. Cross Jr. have studied the relationship between Black people's self-concept and their mental health (Lal, 2002), leading to valuable applied research that ended American school segregation.

Section Review: Contemporary Perspectives in Psychology

1. In what way does the cognitive approach combine aspects of Gestalt psychology and behaviorism?
2. What are three areas of interest to psychologists who favor the biopsychological perspective?
3. Why has the sociocultural perspective become influential?

The Scope of Psychology

As psychology has evolved as a science, its fields of specialization have multiplied, and its educational and training requirements have become formalized. Today psychologists work in a wide variety of academic and professional settings as displayed in Figure 1-1. There are 56 divisions of the American Psychological Association and close to 130 different occupational categories. Psychologists, in particular, were faced with responding to the global coronavirus pandemic; those in clinical areas had significant increases in client referrals and treatment areas changed substantially (American Psychological Association, 2021).

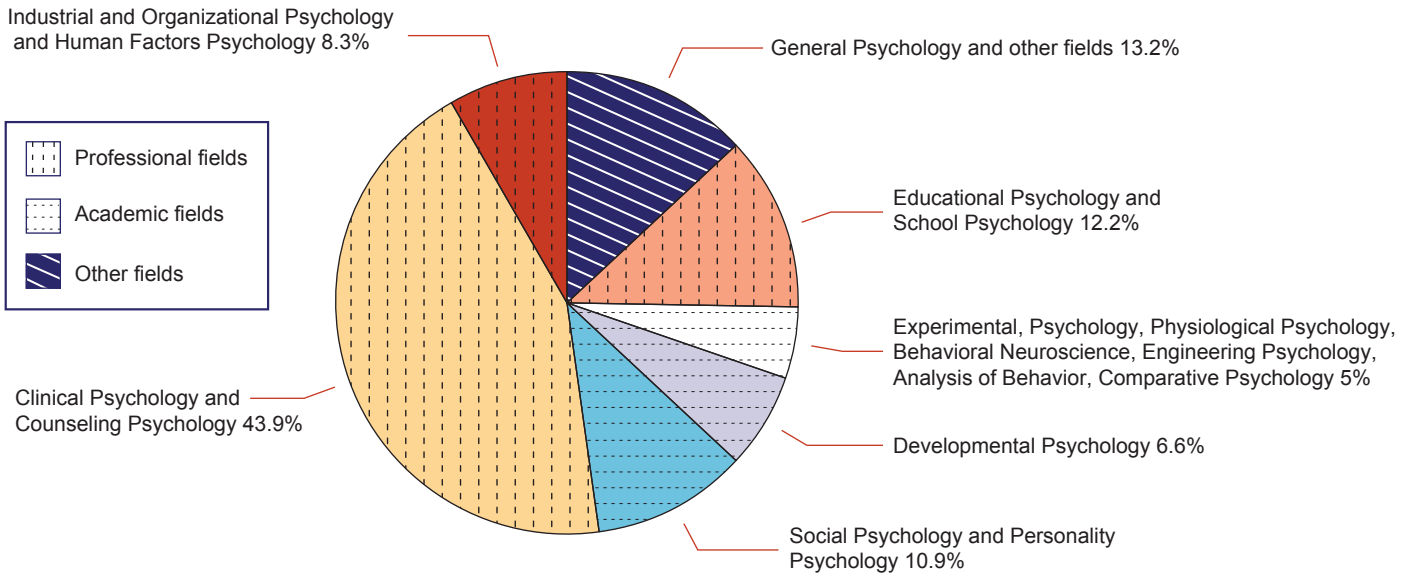


FIGURE 1-1 Fields of Specialization in Psychology

This graph presents the percentages of members of the American Psychological Association working in major fields of specialization.

Source: American Psychological Association (2021).

Careers in Psychology

Individuals with Ph.D. or Professional Degrees in Psychology can be employed in many different occupational categories.

Source: Compiled from American Psychological Association (2019).

But how does one go about becoming a psychologist? Psychologists first earn a bachelor's degree, preferably, but not necessarily, in psychology. Earning a master's-level degree takes 1 or 2 years of additional schooling. Those who pursue a doctorate (Ph.D.) in psychology generally take 4 to 6 years beyond the bachelor's degree to do so and typically write a dissertation based on an original research study that they conduct. Those who pursue doctorates (Ph.D. or PsyD) in clinical or counseling psychology complete internships in their subfield after the doctorate. Most undergraduate psychology departments offer courses devoted to discussing career options in psychology and help with planning to pursue such careers in and outside of psychology.

Academic Fields of Specialization

Most of the chapters in this book discuss academic fields of specialization in psychology, usually practiced by psychologists working at colleges or universities. Because each field of psychology contains subfields, which in turn contain sub-subfields, a budding psychologist has hundreds of potential specialties from which to choose. For example, a psychologist specializing in the field of sensation and perception might be interested in the subfield of vision, with special interest in the sub-subfield of color vision.

basic research Research aimed at finding answers to questions out of theoretical interest or intellectual curiosity.

applied research Research aimed at improving the quality of life and solving practical problems.

experimental psychology The field primarily concerned with laboratory research on basic psychological processes, including perception, learning, memory, thinking, language, motivation, and emotion.

Psychology researchers typically conduct either **basic research**, which is aimed at contributing to knowledge, or **applied research**, which is aimed at solving a practical problem. Note that basic research and applied research are not mutually exclusive, and many psychologists conduct both kinds of research. Findings from basic research can often be applied outside the laboratory. For example, psychologists have taken basic research findings on the interactive effects of alcohol and nicotine as the basis for treatment programs for individuals who have a problem with both drinking and smoking (Rohsenow, 2005).

A large field of academic specialization in psychology is **experimental psychology**. Experimental psychologists restrict themselves chiefly to laboratory research on basic psychological processes, including perception, learning, memory, thinking, language, motivation, and emotion. Though this field is called experimental psychology, it is not the only field that uses experiments. Psychologists in almost all fields of psychology conduct experimental research.

Consider some of the topics tackled by experimental psychologists that will be discussed in upcoming chapters. Chapter 5 describes how perception researchers determine whether people can identify other individuals by their odor (other than your roommate, of course!). Chapter 8 explains how memory researchers assess the effect of people's moods

Comparative Psychology

This field is particularly concerned with studying how evolution has led to animals adapting their behavior to different ecological niches and can aid in our understanding of human attachment and feeding.

Source: Photo Smoothies/Shutterstock.com.

on their ability to recall information. And Chapter 12 discusses how emotion researchers demonstrate the effect of facial expressions on emotional experiences.

Psychologists in the field of **behavioral neuroscience** study the biological bases of behavior and cognitive processes. Chapter 3 discusses research by behavioral neuroscientists on the effects of natural opiates in the brain and the differences in functioning between the left and right hemispheres of the brain. In Chapter 6, you will learn of research by behavioral neuroscientists on the effects of psychoactive drugs on mind and behavior.

The related field of **comparative psychology** studies similarities and differences in the physiology, behaviors, and abilities of animals, including the human species. The field is particularly concerned with studying how evolution has led to animals adapting their behavior to different ecological niches (Tobach, 2006). Comparative psychologists study motives related to eating, drinking, aggression, courtship, sexual behavior, and parenting. Chapter 9 discusses how comparative psychologists study whether apes can learn to use language.

The field of **developmental psychology** is home to psychologists who study the factors responsible for physical, cognitive, and social changes across the life span. Research in developmental psychology has found, for example, that undergraduate students who report having had a lack of affection by parents in childhood are more prone to depression and problems in romantic relationships later on (M. S. Takeuchi et al., 2010). Chapter 4 presents research showing that infants are born with better perceptual skills than you might assume and that many gender differences might be smaller than commonly believed.

Personality psychology is concerned with differences in behavior among individuals. As noted in Chapter 13, this field seeks answers to questions such as these: Are our personalities determined more by nature or by nurture? To what extent do people behave consistently from one situation to another? Personality psychologists also devise tests for assessing personality, such as the famous Rorschach "inkblot test."

Psychologists in the field of **social psychology** study the effects people have on one another and the power of social situations. In Chapter 17, you will learn how social psychologists study the factors that influence interpersonal attraction, the problem of "groupthink" in making important decisions, and the reasons why people are often all too willing to follow orders to harm others.

behavioral neuroscience The field that studies the physiological bases of human and animal behavior and mental processes.

comparative psychology The field that studies similarities and differences in the physiology, behaviors, and abilities of different species of animals, including human beings.

developmental psychology The field that studies physical, perceptual, cognitive, and psychosocial changes across the life span.

personality psychology The field that focuses on factors accounting for the differences in behavior and enduring personal characteristics among individuals.

social psychology The field that studies how other people affect our thoughts, feelings, and behaviors.

clinical psychology The field that applies psychological principles to the prevention, diagnosis, and treatment of psychological disorders.

counseling psychology The field that applies psychological principles to help individuals deal with problems of daily living, generally less serious ones than those treated by clinical psychologists.

Professional Fields of Specialization

Professional psychologists commonly work in settings outside college or university classrooms and laboratories. Undergraduates are often surprised at the variety of professional fields of psychology (Stark-Wroblewski et al., 2006). Two of the largest are **clinical psychology** and **counseling psychology**, which deal with the causes, prevention, diagnosis,

Clinical and Counseling Psychology

In theory, counseling psychologists learn more about dealing with problems of everyday living including career counseling, whereas clinical psychologists typically treat more serious disorders in hospital settings. In practice, however, both types of psychologists can work in any setting on a wide range of problems.

Source: Prostock-studio/Shutterstock.com.

and treatment of psychological disorders (see Chapters 14 and 15). Along with social workers and marital and family therapists (MFTs), clinical and counseling psychologists (and master's-level counselors) can work in a wide variety of settings beyond the university or research lab, such as private practice, mental health clinics, prisons, or hospitals.

Clinical and counseling psychology are distinctly different from the medical field of **psychiatry**. A psychiatrist is not a psychologist but a physician (with either an M.D. or a D.O.) who has served a residency in psychiatry, which takes a medical approach to the treatment of psychological disorders, though some psychiatrists also offer psychotherapy to their clients. Because psychiatrists are physicians, they may prescribe drugs or other biomedical treatments, whereas psychologists cannot prescribe medication except in very specific circumstances (i.e., in five U.S. states and the military with additional training in pharmacology). Chapter 15 considers the various biopsychological treatments, including drugs to treat schizophrenia and electroconvulsive therapy to relieve depression.

psychiatry The field of medicine that diagnoses and treats psychological disorders by using medical or psychological forms of therapy.

Those who practice **health psychology** apply psychological principles to the maintenance of health and coping with illness. Major subareas include the relationship between stress and illness, the effects of behavior on health and illness, and the role of psychology in serious and terminal disease. Health psychologists also develop interventions that reduce health-impairing habits, such as overeating and sedentary lifestyles (Baban & Cracian, 2007). Chapter 16 presents a comprehensive discussion of research findings and applications in health psychology.

health psychology The field that applies psychological principles to the prevention and treatment of physical illness.

Psychologists who practice **industrial/organizational psychology** work to increase productivity in businesses, industries, government agencies, and virtually any other kind of organization. They do so by improving working conditions, methods for hiring and training employees, and management techniques used by administrators. Some industrial/organizational psychologists stress the importance of improving the quality of workers' lives, not just productivity (Zickar, 2003).

industrial/organizational psychology The field that applies psychological principles to improve productivity in businesses, industries, and government agencies.

One of the oldest professional fields of specialization is **school psychology**. School psychologists work in elementary, middle, and high schools to help improve students' academic performance and school behavior. For example, school psychologists take part in programs to improve students' reading acquisition (Bramlett et al., 2002). Today, school psychologists have been forced to deal with more serious issues, such as the prevention of suicide and the aftermath of school shootings (Debski et al., 2007) as well as the plague of bullying and cyberbullying (Diamanduros et al., 2008).

school psychology The field that applies psychological principles to improve the academic performance and social behavior of students in elementary, middle, and high schools.

The allied field of **educational psychology** tries to improve the educational process, including curriculum, teaching, and the administration of academic programs. For example, educational psychologists help teachers understand the challenges faced by students diagnosed with dyslexia (T. Regan & Woods, 2000). They also assess the effectiveness of inclusive programs versus traditional programs on the progress of students with intellectual

educational psychology The field that applies psychological principles to help improve curriculum, teaching methods, and administrative procedures.

Educational Psychology

Educational Psychology is a broad field related to learning in an educational setting.

Source: Ground Picture/Shutterstock.com.

or physical disabilities (G. Lindsay, 2007). There has been an influential movement in educational psychology to use only practices that have been supported by sound scientific research rather than simply relying on traditional practices or the opinions of educators (Stoiber & Waas, 2002), including neuromyths such as right brain/left brain learning styles (Lindell & Kidd, 2011). Educational psychologists usually are faculty members at colleges or universities, whereas school psychologists typically work in the schools directly or for the school district.

Sport psychology applies psychology to the acquisition of athletic skills, the improvement of athletic performance, and the maintenance of exercise programs. Sport psychologists typically work with elite collegiate, Olympic, or professional athletes to help them achieve optimal performance. They may also work with injured athletes to help them cope with the rehabilitation process (Hamson-Utley et al., 2009) or wheelchair athletes to help them adjust to their physical disability while performing to their optimal level (Page et al., 2001). Chapter 11 discusses the relationship between motivation and sport performance.

sport psychology The field that applies psychological principles to help amateur and professional athletes improve their performance.

Psychologists who practice **forensic psychology** apply psychology to the legal system. The topics they study include the jury deliberation process and the best ways to select jurors. Forensic psychologists also help train police to handle domestic disputes, negotiate with hostage takers, and cope with job-related stress. And they seek to determine the fairest ways to present lineups of criminal suspects for identification by eyewitnesses (Kebbell, 2000), assess the competency of children to testify in court (Bala et al., 2010), develop training programs for law enforcement leaders (H. A. Miller et al., 2009), and conduct risk assessments of sex offenders being considered for parole (Freeman et al., 2010). Chapter 14 discusses the insanity defense and Chapter 8 describes another issue of interest to forensic psychologists: What is the best way to obtain accurate eyewitness testimony?

forensic psychology The field that applies psychological principles to improve the legal system, including the work of police and juries.

Environmental psychology studies the effect of the physical environment on human behavior, including how to design environments that improve people's quality of life. Environmental psychologists work with a host of environmental settings and engage in activities as diverse as designing capsule habitats for exploring outer space, the deep sea, and the polar regions (Suedfeld & Steel, 2000) and designing exhibition centers, such as zoos and museums, to providing effective educational environments (Bitgood, 2002). Environmental psychologists also contribute to our knowledge of the role of changes in

environmental psychology The field that applies psychological principles to help improve the physical environment, including the design of buildings and the reduction of noise.

Environmental Psychology

Environmental psychologists work with a host of environmental settings, including environmental stressors (such as noise and crowding), design variables (such as lighting and temperature), and other qualities of the physical environment.

Source: Minimallista/Shutterstock.com.

ambient light levels and other environmental factors implicated in seasonal affective disorder (discussed in Chapter 14), which is marked by the development of depressive disorders during a particular season of the year—typically the winter (Tonello, 2008). This is a multidisciplinary field, and the applied research area is called *ergonomics*, *human factors*, or *human systems integration*.

One of the newer fields of applied psychology is **peace psychology**, which aims at reducing conflicts and maintaining peace. Though the field is comparatively new, it became a formal subdiscipline during the Cold War, which began at the conclusion of World War II and ended in the early 1990s. Today, peace psychologists are particularly interested in finding ways to reduce tensions that promote ethnic conflicts and terrorism (R. V. Wagner, 2006). An even newer domain of psychology is **positive psychology** and was coined in 1998 when the then president of the American Psychological Association, Martin Seligman, chose positivity as his presidential theme. This field focuses on the scientific study of living a worthwhile life by researching well-being and strengths to help people and communities thrive. Stress and trauma, and certainly the global COVID-19 pandemic, can create negative emotional states. Positive psychologists and other mental health professionals assist in buffering stress and promote coping strategies. In a study across four Chinese universities, researchers found that students who used high levels of positive thinking and planning had lower levels of psychological distress during the pandemic (D. Yang et al., 2020).

peace psychology The field that applies psychological principles to reducing conflict and maintaining peace.

positive psychology The field that applies psychological principles to helping individuals strengthen well-being.

Perhaps we have convinced you already that psychology is pretty cool—the scientific study of behavior and cognitive processes with applications to zoos, war, education, health, courts, global health crises, businesses, and your own happiness. Even if you are not yet convinced, though, please read on and you will be.

Section Review: The Scope of Psychology

1. What is the difference between basic and applied research?
2. How does psychiatry differ from psychology?
3. What is the nature of peace psychology?

Chapter Summary

The Historical Context of Psychology

- Psychology is the scientific study of behavior and cognitive processes.
- The roots of psychology are in philosophy and physiology.
- Structuralism sought to analyze the mind into its component parts.
- Functionalism favored the study of how the conscious mind helps the individual adapt to the environment.
- Gestalt psychology favored the study of the mind as active and the study of perception as holistic.
- Psychoanalysis studies the influence of unconscious motives on behavior.
- Behaviorism rejects the study of the mind in favor of the study of observable behavior.

Contemporary Perspectives in Psychology

- To date, psychology has no unifying scientific paradigm, only competing psychological perspectives.
- The humanistic perspective, which favors the study of conscious mental experience and accepts the reality of free will, arose in opposition to psychoanalysis and behaviorism.
- The cognitive perspective views the individual as an active processor of information.
- The biopsychological perspective favors the study of the biological bases of behavior, mental experiences, and cognitive processes.
- The sociocultural perspective insists that psychologists must study people in their social and cultural contexts.

The Scope of Psychology

- Academic fields of specialization are chiefly concerned with conducting basic research.
- Professional fields of specialization in psychology are chiefly concerned with applying psychological research findings.

Key Terms

psychology (p. 2)

The Historical Context of Psychology

analytic introspection (p. 6)
behaviorism (p. 8)
differential psychology (p. 5)
empiricism (p. 3)
functionalism (p. 6)
Gestalt psychology (p. 8)
nativism (p. 3)
psychoanalysis (p. 8)
psychophysics (p. 5)
rationalism (p. 3)
structuralism (p. 6)

Contemporary Perspectives in Psychology

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biopsychological perspective (p. 12)
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scientific paradigm (p. 10)
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The Scope of Psychology

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basic research (p. 15)
behavioral neuroscience (p. 16)
comparative psychology (p. 16)
clinical psychology (p. 16)
counseling psychology (p. 16)
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health psychology (p. 17)
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personality psychology (p. 16)
positive psychology (p. 19)
psychiatry (p. 17)
school psychology (p. 17)
social psychology (p. 16)
sport psychology (p. 18)

Chapter Quiz

Note: Answers for the Chapter Quiz questions are provided at the end of the book.

1. If you insisted that "seeing is believing," you would show your belief in
a. nativism.
b. empiricism.
c. rationalism.
d. psychic determinism.

2. The main difference between a psychiatrist and a clinical psychologist is that the psychiatrist
a. is a physician/medical doctor.
b. might analyze dreams.
c. relies strictly on Freudian theory.
d. deals with more serious kinds of disorders.

3. A psychologist would be most likely to
a. prescribe drugs to treat anxiety.
b. study the ability of apes to learn language.
c. provide evidence for or against the existence of God.
d. treat depression by administering electroconvulsive therapy.

4. Darwin's theory of evolution had its greatest impact on
a. structuralism.
b. functionalism.
c. Gestalt psychology.
d. cognitive psychology.

5. Biology and psychology are both sciences because they
a. study the brain.
b. rely on statistics.
c. share a common method.
d. require specialized education.

6. The psychological perspective that is interested in studying the brain, the hormone system, and the effects of heredity on behavior is the
a. differential perspective.
b. neurochemical perspective.
c. cerebrocortical perspective.
d. biopsychological perspective.

7. A research study on the effectiveness of psychological counseling techniques in helping Olympic athletes reach their potential would be an example of
a. pure research.
b. basic research.
c. applied research.
d. psychic determinism.

8. Research in differential psychology, a field founded by Francis Galton, would be most likely to
a. use placebo control groups.
b. determine the effect of exercise on academic performance.
c. study factors that make certain individuals more stress-resistant than others.
d. assess changes in the personality of a single subject across various life stages.

9. A behaviorist would be most likely to agree with the belief that leaders
a. are made, not born.
b. are born, not made.
c. use will power to dominate other people.
d. are motivated by an unconscious desire for control.

10. An interest in the unconscious mind would be most characteristic of
    a. behaviorism.
    b. psychoanalysis.
    c. humanistic psychology.
    d. cognitive psychology.

11. B. F. Skinner would be most likely to attribute your desire to pursue a college education to
    a. your drive for self-actualization.
    b. an unconscious need to prove yourself.
    c. your past success in academic courses.
    d. intellectual interests inherited from your parents.

12. If a psychologist is interested in helping you to feel more self-actualized in your life, she is probably a(n)
    a. forensic psychologist.
    b. cognitive psychologist.
    c. humanistic psychologist.
    d. experimental psychologist.

13. The main employment settings of psychologists are
    a. private practices.
    b. businesses and industries.
    c. colleges and universities.
    d. governmental research laboratories.

14. Cognitive psychology can be viewed as the offspring of
    a. psychoanalysis and functionalism.
    b. behaviorism and Gestalt psychology.
    c. structuralism and humanistic psychology.
    d. biopsychology and differential psychology.

15. According to philosopher Thomas Kuhn, as a science matures, it develops a paradigm shared by most scientists. Today, psychology
    a. lacks a unifying scientific paradigm.
    b. is dominated by the humanistic paradigm.
    c. is dominated by the behavioristic paradigm.
    d. is dominated by the psychoanalytic paradigm.

Thought Questions

1. How would nativists and empiricists differ in their opinion of early childhood intervention such as the United States Head Start program for low-income children and families?

2. In the late 19th and early 20th centuries, many Americans believed that women's and men's lives should be lived in "separate spheres" and women were unable to obtain advanced degrees such as a Ph.D. at educational institutions such as Harvard University. How did this notion limit women's contributions to psychology?

3. Suppose you find that your professor is an unusually "happy" person—smiling, cracking jokes, and complimenting students on their brilliant insights. How would the different psychological perspectives explain this behavior?