

Chapter 1.2

History of Psychology

Early Psychologists

The earliest psychologists that we know about are the Greek philosophers Plato (428–347 BC) and Aristotle (384–322 BC). These philosophers asked many of the same questions that today’s psychologists ask; for instance, they questioned the distinction between nature and nurture and the existence of free will. In terms of the former, Plato argued on the nature side, believing that certain kinds of knowledge are innate or inborn, whereas Aristotle was more on the nurture side, believing that each child is born as an “empty slate” (in Latin *atabula rasa*) and that knowledge is primarily acquired through learning and experience.

European philosophers continued to ask these fundamental questions during the Renaissance. For instance, the French philosopher René Descartes (1596–1650) also considered the issue of free will, arguing in its favor and believing that the mind controls the body through the pineal gland in the brain (an idea that made some sense at the time but was later proved incorrect). Descartes also believed in the existence of innate natural abilities. A scientist as well as a philosopher, Descartes dissected animals and was among the first to understand that the nerves controlled the muscles. He also addressed the relationship between mind (the mental aspects of life) and body (the physical aspects of life). Descartes believed in the principle of *dualism*: that the mind is fundamentally different from the mechanical body. Other European philosophers, including Thomas Hobbes (1588–1679), John Locke (1632–1704), and Jean-Jacques Rousseau (1712–1778), also weighed in on these issues.

The fundamental problem that these philosophers faced was that they had few methods for settling their claims. Most philosophers didn’t conduct any research on these questions, in part because they didn’t yet know how to do it, and in part because they weren’t sure it was even possible to objectively study human experience. But dramatic changes came during the 1800s with the help of the first two research psychologists: the German psychologist Wilhelm Wundt (1832–1920), who developed a psychology laboratory in Leipzig, Germany, and the American psychologist William James (1842–1910), who founded a psychology laboratory at Harvard University.

Structuralism: Introspection and the Awareness of Subjective Experience

Wundt's research in his laboratory in Leipzig focused on the nature of consciousness itself. Wundt and his students believed that it was possible to analyze the basic elements of the mind and to classify our conscious experiences scientifically. Wundt began the field known as structuralism, *a school of psychology whose goal was to identify the basic elements or "structures" of psychological experience*. Its goal was to create a "periodic table" of the "elements of sensations," similar to the periodic table of elements that had recently been created in chemistry.

Structuralists used the method of *introspection* to attempt to create a map of the elements of consciousness. Introspection involves *asking research participants to describe exactly what they experience as they work on mental tasks*, such as viewing colors, reading a page in a book, or performing a math problem. A participant who is reading a book might report, for instance, that he saw some black and colored straight and curved marks on a white background. In other studies the structuralists used newly invented reaction time instruments to systematically assess not only what the participants were thinking but how long it took them to do so. Wundt discovered that it took people longer to report what sound they had just heard than to simply respond that they had heard the sound. These studies marked the first time researchers realized that there is a difference between the *sensation* of a stimulus and the *perception* of that stimulus, and the idea of using reaction times to study mental events has now become a mainstay of cognitive psychology.

Perhaps the best known of the structuralists was Edward Bradford Titchener (1867–1927). Titchener was a student of Wundt who came to the United States in the late 1800s and founded a laboratory at Cornell University. In his research using introspection, Titchener and his students claimed to have identified more than 40,000 sensations, including those relating to vision, hearing, and taste.

An important aspect of the structuralist approach was that it was rigorous and scientific. The research marked the beginning of psychology as a science, because it demonstrated that mental events could be quantified. But the structuralists also discovered the limitations of introspection. Even highly trained research participants were often unable to report on their subjective

experiences. When the participants were asked to do simple math problems, they could easily do them, but they could not easily answer *how* they did them. Thus the structuralists were the first to realize the importance of unconscious processes—that many important aspects of human psychology occur outside our conscious awareness, and that psychologists cannot expect research participants to be able to accurately report on all of their experiences.

Functionalism and Evolutionary Psychology

In contrast to Wundt, who attempted to understand the nature of consciousness, the goal of William James and the other members of the school of functionalism was *to understand why animals and humans have developed the particular psychological aspects that they currently possess* (Hunt, 1993).^[5] For James, one's thinking was relevant only to one's behavior. As he put it in his psychology textbook, "My thinking is first and last and always for the sake of my doing" (James, 1890).^[6]

James and the other members of the functionalist school were influenced by Charles Darwin's (1809–1882) *theory of natural selection*, which proposed that the physical characteristics of animals and humans evolved because they were useful, or functional. The functionalists believed that Darwin's theory applied to psychological characteristics too. Just as some animals have developed strong muscles to allow them to run fast, the human brain, so functionalists thought, must have adapted to serve a particular function in human experience.

Although functionalism no longer exists as a school of psychology, its basic principles have been absorbed into psychology and continue to influence it in many ways. The work of the functionalists has developed into the field of evolutionary psychology, *a branch of psychology that applies the Darwinian theory of natural selection to human and animal behavior* (Dennett, 1995; Tooby & Cosmides, 1992).^[7] Evolutionary psychology accepts the functionalists' basic assumption, namely that many human psychological systems, including memory, emotion, and personality, serve key adaptive functions. As we will see in the chapters to come, evolutionary psychologists use evolutionary theory to understand many different behaviors including romantic attraction, stereotypes and prejudice, and even the causes of many psychological disorders.

A key component of the ideas of evolutionary psychology is *fitness*. Fitness refers to *the extent to which having a given characteristic helps the individual organism survive and reproduce at a*

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higher rate than do other members of the species who do not have the characteristic. Fitter organisms pass on their genes more successfully to later generations, making the characteristics that produce fitness more likely to become part of the organism's nature than characteristics that do not produce fitness. For example, it has been argued that the emotion of jealousy has survived over time in men because men who experience jealousy are more fit than men who do not. According to this idea, the experience of jealousy leads men to be more likely to protect their mates and guard against rivals, which increases their reproductive success (Buss, 2000).^[8]

Despite its importance in psychological theorizing, evolutionary psychology also has some limitations. One problem is that many of its predictions are extremely difficult to test. Unlike the fossils that are used to learn about the physical evolution of species, we cannot know which psychological characteristics our ancestors possessed or did not possess; we can only make guesses about this. Because it is difficult to directly test evolutionary theories, it is always possible that the explanations we apply are made up after the fact to account for observed data (Gould & Lewontin, 1979).^[9] Nevertheless, the evolutionary approach is important to psychology because it provides logical explanations for why we have many psychological characteristics.

Psychodynamic Psychology

Perhaps the school of psychology that is most familiar to the general public is the *psychodynamic approach* to understanding behavior, which was championed by Sigmund Freud (1856–1939) and his followers. Psychodynamic psychology is an *approach to understanding human behavior that focuses on the role of unconscious thoughts, feelings, and memories.* Freud developed his theories about behavior through extensive analysis of the patients that he treated in his private clinical practice. Freud believed that many of the problems that his patients experienced, including anxiety, depression, and sexual dysfunction, were the result of the effects of painful childhood experiences that the person could no longer remember.

Freud's ideas were extended by other psychologists whom he influenced, including Carl Jung (1875–1961), Alfred Adler (1870–1937), Karen Horney (1855–1952), and Erik Erikson (1902–1994). These and others who follow the psychodynamic approach believe that it is possible to help the patient if the unconscious drives can be remembered, particularly through a deep and

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thorough exploration of the person's early sexual experiences and current sexual desires. These explorations are revealed through talk therapy and dream analysis, in a process called *psychoanalysis*.

The founders of the school of psychodynamics were primarily practitioners who worked with individuals to help them understand and confront their psychological symptoms. Although they did not conduct much research on their ideas, and although later, more sophisticated tests of their theories have not always supported their proposals, psychodynamics has nevertheless had substantial impact on the field of psychology, and indeed on thinking about human behavior more generally (Moore & Fine, 1995).^[10] The importance of the unconscious in human behavior, the idea that early childhood experiences are critical, and the concept of therapy as a way of improving human lives are all ideas that are derived from the psychodynamic approach and that remain central to psychology.

Behaviorism and the Question of Free Will

Although they differed in approach, both structuralism and functionalism were essentially studies of the mind. The psychologists associated with the school of *behaviorism*, on the other hand, were reacting in part to the difficulties psychologists encountered when they tried to use introspection to understand behavior. Behaviorism is *a school of psychology that is based on the premise that it is not possible to objectively study the mind, and therefore that psychologists should limit their attention to the study of behavior itself*. Behaviorists believe that the human mind is a “black box” into which stimuli are sent and from which responses are received. They argue that there is no point in trying to determine what happens in the box because we can successfully predict behavior without knowing what happens inside the mind. Furthermore, behaviorists believe that it is possible to develop laws of learning that can explain all behaviors.

The first behaviorist was the American psychologist John B. Watson (1878–1958). Watson was influenced in large part by the work of the Russian physiologist Ivan Pavlov (1849–1936), who had discovered that dogs would salivate at the sound of a tone that had previously been associated with the presentation of food. Watson and the other behaviorists began to use these ideas to explain how events that people and other organisms experienced in their environment (*stimuli*) could produce specific behaviors (*responses*). For instance, in Pavlov's research

the *stimulus* (either the food or, after learning, the tone) would produce the *response* of salivation in the dogs.

In his research Watson found that systematically exposing a child to fearful stimuli in the presence of objects that did not themselves elicit fear could lead the child to respond with a fearful behavior to the presence of the stimulus (Watson & Rayner, 1920; Beck, Levinson, & Irons, 2009).^[11] In the best known of his studies, an 8-month-old boy named Little Albert was used as the subject. Here is a summary of the findings:

The boy was placed in the middle of a room; a white laboratory rat was placed near him and he was allowed to play with it. The child showed no fear of the rat. In later trials, the researchers made a loud sound behind Albert's back by striking a steel bar with a hammer whenever the baby touched the rat. The child cried when he heard the noise. After several such pairings of the two stimuli, the child was again shown the rat. Now, however, he cried and tried to move away from the rat.

In line with the behaviorist approach, the boy had learned to associate the white rat with the loud noise, resulting in crying.

The most famous behaviorist was Burrhus Frederick (B. F.) Skinner (1904–1990), who expanded the principles of behaviorism and also brought them to the attention of the public at large. Skinner used the ideas of stimulus and response, along with the application of rewards or *reinforcements*, to train pigeons and other animals. And he used the general principles of behaviorism to develop theories about how best to teach children and how to create societies that were peaceful and productive. Skinner even developed a method for studying thoughts and feelings using the behaviorist approach (Skinner, 1957, 1968, 1972).^[12]

The behaviorists made substantial contributions to psychology by identifying the principles of *learning*. Although the behaviorists were incorrect in their beliefs that it was not possible to measure thoughts and feelings, their ideas provided new ideas that helped further our understanding regarding the nature-nurture debate as well as the question of free will. The ideas of behaviorism are fundamental to psychology and have been developed to help us better understand the role of prior experiences in a variety of areas of psychology.

The Cognitive Approach and Cognitive Neuroscience

Science is always influenced by the technology that surrounds it, and psychology is no exception. Thus it is no surprise that beginning in the 1960s, growing numbers of psychologists began to think about the brain and about human behavior in terms of the computer, which was being developed and becoming publicly available at that time. The analogy between the brain and the computer, although by no means perfect, provided part of the impetus for a new school of psychology called *cognitive psychology*. Cognitive psychology is *a field of psychology that studies mental processes, including perception, thinking, memory, and judgment*. These actions correspond well to the processes that computers perform.

Although cognitive psychology began in earnest in the 1960s, earlier psychologists had also taken a cognitive orientation. Some of the important contributors to cognitive psychology include the German psychologist Hermann Ebbinghaus (1850–1909), who studied the ability of people to remember lists of words under different conditions, and the English psychologist Sir Frederic Bartlett (1886–1969), who studied the cognitive and social processes of remembering. Bartlett created short stories that were in some ways logical but also contained some very unusual and unexpected events. Bartlett discovered that people found it very difficult to recall the stories exactly, even after being allowed to study them repeatedly, and he hypothesized that the stories were difficult to remember because they did not fit the participants' expectations about how stories should go. The idea that our memory is influenced by what we already know was also a major idea behind the cognitive-developmental stage model of Swiss psychologist Jean Piaget (1896–1980). Other important cognitive psychologists include Donald E. Broadbent (1926–1993), Daniel Kahneman (1934–), George Miller (1920–), Eleanor Rosch (1938–), and Amos Tversky (1937–1996).

In its argument that our thinking has a powerful influence on behavior, the cognitive approach provided a distinct alternative to behaviorism. According to cognitive psychologists, ignoring the mind itself will never be sufficient because people interpret the stimuli that they experience. For instance, when a boy turns to a girl on a date and says, “You are so beautiful,” a behaviorist would probably see that as a reinforcing (positive) stimulus. And yet the girl might not be so easily fooled. She might try to understand why the boy is making this particular statement at this particular time and wonder if he might be attempting to influence her through the comment.

Cognitive psychologists maintain that when we take into consideration how stimuli are evaluated
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and interpreted, we understand behavior more deeply.

Cognitive psychology remains enormously influential today, and it has guided research in such varied fields as language, problem solving, memory, intelligence, education, human development, social psychology, and psychotherapy. The cognitive revolution has been given even more life over the past decade as the result of recent advances in our ability to see the brain in action using *neuroimaging* techniques. Neuroimaging is *the use of various techniques to provide pictures of the structure and function of the living brain* (Ilardi & Feldman, 2001).^[19] These images are used to diagnose brain disease and injury, but they also allow researchers to view information processing as it occurs in the brain, because the processing causes the involved area of the brain to increase metabolism and show up on the scan. We have already discussed the use of one neuroimaging technique, functional magnetic resonance imaging (fMRI), in the research focus earlier in this section, and we will discuss the use of neuroimaging techniques in many areas of psychology in the chapters to follow.

Social-Cultural Psychology

A final school, which takes a higher level of analysis and which has had substantial impact on psychology, can be broadly referred to as the *social-cultural approach*. The field of social-cultural psychology is *the study of how the social situations and the cultures in which people find themselves influence thinking and behavior*. Social-cultural psychologists are particularly concerned with how people perceive themselves and others, and how people influence each other's behavior. For instance, social psychologists have found that we are attracted to others who are similar to us in terms of attitudes and interests (Byrne, 1969),^[20] that we develop our own beliefs and attitudes by comparing our opinions to those of others (Festinger, 1954),^[21] and that we frequently change our beliefs and behaviors to be similar to those of the people we care about—a process known as *conformity*.

An important aspect of social-cultural psychology are social norms—*the ways of thinking, feeling, or behaving that are shared by group members and perceived by them as appropriate* (Asch, 1952; Cialdini, 1993).^[22] Norms include customs, traditions, standards, and rules, as well as the general values of the group. Many of the most important social norms are determined by the *culture* in which we live, and these cultures are studied by *cross-cultural psychologists*. A culture represents *the common set of social norms, including religious and*

family values and other moral beliefs, shared by the people who live in a geographical region (Fiske, Kitayama, Markus, & Nisbett, 1998; Markus, Kitayama, & Heiman, 1996; Matsumoto, 2001).^[23] Cultures influence every aspect of our lives, and it is not inappropriate to say that our culture defines our lives just as much as does our evolutionary experience (Mesoudi, 2009).^[24]

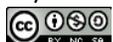
Psychologists have found that there is a fundamental difference in social norms between Western cultures (including those in the United States, Canada, Western Europe, Australia, and New Zealand) and East Asian cultures (including those in China, Japan, Taiwan, Korea, India, and Southeast Asia). Norms in Western cultures are primarily oriented toward *individualism*, which is about valuing the self and one's independence from others. Children in Western cultures are taught to develop and to value a sense of their personal self, and to see themselves in large part as separate from the other people around them. Children in Western cultures feel special about themselves; they enjoy getting gold stars on their projects and the best grade in the class. Adults in Western cultures are oriented toward promoting their own individual success, frequently in comparison to (or even at the expense of) others.

Norms in the East Asian culture, on the other hand, are oriented toward interdependence or *collectivism*. In these cultures children are taught to focus on developing harmonious social relationships with others. The predominant norms relate to group togetherness and connectedness, and duty and responsibility to one's family and other groups. When asked to describe themselves, the members of East Asian cultures are more likely than those from Western cultures to indicate that they are particularly concerned about the interests of others, including their close friends and their colleagues.

Another important cultural difference is the extent to which people in different cultures are bound by social norms and customs, rather than being free to express their own individuality without considering social norms (Chan, Gelfand, Triandis, & Tzeng, 1996).^[25] Cultures also differ in terms of personal space, such as how closely individuals stand to each other when talking, as well as the communication styles they employ.

It is important to be aware of cultures and cultural differences because people with different cultural backgrounds increasingly come into contact with each other as a result of increased travel and immigration and the development of the Internet and other forms of communication.

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In the United States, for instance, there are many different ethnic groups, and the proportion of the population that comes from minority (non-White) groups is increasing from year to year. The social-cultural approach to understanding behavior reminds us again of the difficulty of making broad generalizations about human nature. Different people experience things differently, and they experience them differently in different cultures.

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