



Research Methods in Psychology

What is research?

Research means “Collecting information about a particular subject or investigating”.

It’s not just a trip to the library to pick up a stack of books or pick the first five hits from a computer search. It is the hunt for truth.

Research is about answering questions

Our mind asks questions and to answer this we research to satisfy ourselves.

Where do these questions come from?

- a. Personal experiences e.g Newton’s experience
- b. Curiosity to know something e.g. Galileo’s observational astronomy
- c. Studying previous research e.g. Sound generation

Psychological research

Psychological research refers to research conducted by psychologists who employ a wide range of methods to investigate and analyze the experiences and behavior of individuals or groups.

Research methods in psychology

- a. Descriptive research: Simply gathers information and gives detailed description
- b. Experimental research & Correlational research: Investigates specific variables (attributes)

1. Descriptive research:

Descriptive research methods aim to depict by describing the data and characteristics of the phenomenon being studied. The data description is factual, accurate, and systematic but the research cannot describe what caused a situation.

The description is used for frequencies, averages, and other statistical calculations.

The goal is to portray what already exists in a group.

For example an opinion poll to find which political candidate people plan to vote for in an upcoming election.

Four types of descriptive research:

There are four types of descriptive research methods in psychology:

a. Naturalistic observation:

It is a research method in which the subject is observed in its natural habitat without any manipulation by the observer.

During naturalistic observation, researchers take great care to avoid interfering with the behavior they are observing.

This method provides a great opportunity to study behavior in "real settings" and to see behavior occur in its most natural state.

Advantages:

1. Realistic view of how behavior occurs
2. Observer effect

Disadvantages:

1. Observer bias
2. Each naturalistic setting is unique

b. Laboratory observation:

It is a research tool that includes observing the individual in a laboratory setting, and closely monitoring their reaction or behavior, which is not as effective as observing them in their natural environment. This method provides more "control" than that of a naturalistic observation but limits reality.

Advantages:

The researcher has some degree of control i-e manageable

Disadvantages:

1. Artificial setting may result in artificial behavior
2. Biased and not conclusive as to cause and effect
3. Observer has the option of being non-participant and the study itself may be structured

c. Case studies:

Case studies are in-depth investigations of a single person, group, event or community. The information is gathered by interacting with the information source through observation, conversation, or psychological testing to describe behavior.

Case studies involve simply observing what happens to, or reconstructing "the case history" of a single participant or group of individuals.

Advantages:

1. Amount of detail it provides
2. The only way to get certain kind of information
3. Study things that are rare

Disadvantages:

1. Observer bias
2. Don't know if the cases studied generalize to larger population
3. May not be representative of condition, event; subject to misinterpretation by experimenter

d. Surveys and interview:

- **Interview:**

The interview is a purposeful conversation. During one-to-one conversations, the interviewer collects detailed personal information from individuals using oral questions.

1. Usually face to face
2. Can use different types of questions, from highly structured (surveys) to unstructured, participant-led (e.g. therapy sessions)
3. Most are semi-structured, i.e. some questions are prepared in advance, but these are flexible and can be adapted to follow areas of interest

- **Survey:**

A survey is a research tool that uses interviews and/or questionnaires to gather information about the attitudes, beliefs, experiences, or behaviors of a large group.

A survey may focus on factual information about individuals, or it might aim to collect the "opinions" of the survey takers.

In this method, the researcher extracts a sample (representative/small group) out of a population to survey because too large a population cannot be studied.

1. Population of the study refers to an entire group of interest to the researcher from which they aim to generalize findings or conclusions. It is a group from which a sample is chosen for the study.
2. Sample of the study refers to the portion of the population selected for study and from which generalizations are made about the entire population.

Advantages:

1. Private information
2. Amount of data from large group of people

Disadvantages:

1. Representative sample out of a population
2. Courtesy bias
3. Misremember things
4. Distort truth

2. Experimental research:

An experiment is a study of cause and effect, differing from non-experimental methods in that it involves the deliberate manipulation of one variable while attempting to keep all other variables constant.

What is a variable?

A variable is something that can be changed, such as a characteristic or value. Variables are commonly utilized in psychology experiments to ascertain if changes to one factor result in changes to another.

Types of variables in experimental method:

1. Independent variable: It is the input variable that is controlled and manipulated by the experimenter to cause change in dependent variable.
2. Dependent variable: It is the output variable that is measured by the experimenter. It tells about the effect produced by independent variable on it.

Experimental group:

In an experiment, there is a group of participants that is exposed to the independent variable or treatment to find the output variable.

For-example

We want to investigate which method is more successful at teaching children to read. The teaching method is the independent variable. The children's reading ability depends on the teaching method used that is the dependent variable.

Advantages:

1. Experiments are the only means by which cause and effect can be established.
2. It allows for precise control of variables.
3. Experiments can be replicated

Disadvantages:

1. Experimenter effect
2. Artificiality
3. Known response from the participant

3. Correlational research:

A Research tool that finds a relationship between two variables that are to be studied. It indicates how one variable may predict another.

It finds the “strength of relationship” between two variables.

For-example:

Self-esteem vs Loneliness

Are you lonely because you have a low self-esteem?

OR

Do you have low self-esteem because you are alone?

Three types of correlational research methods

There are three types of correlational research methods in psychology:

a. Positive correlation:

In this correlation the amount of one variable increases and the other decreases.

For-example:

More studying hours cause a Grade Point Average (GPA)

Less studying hours causes lower Grade Point Average (GPA)

b. Negative correlation:

In this correlation the amount of one variable increases and the other decreases.

For-example:

More playing hours causes lower grade Point Average (GPA)

Less playing hours causes a grade Point Average (GPA)

c. No correlation:

This correlation indicates no relationship between the two variables.

For-example:

Size of the video game player does not affect Grade Point Average (GPA)

Advantages:

1. Calculating the strength of a relationship.
2. Useful as a pointer for further, more detailed research i-e “Predictor”

Disadvantages:

1. Cannot assume cause and effect, strong correlation between variables may be misleading.
2. Lack of correlation may not mean there is no relationship, it could be non-linear.

History of Psychology

The approaches that psychologists have used to assess the issues that interest them have changed dramatically over the history of psychology. Perhaps most importantly, the field has moved steadily from speculation about behavior toward a more objective and scientific approach as the technology available to study human behavior has improved (Benjamin & Baker, 2004).

Different approaches of Psychology

School of Psychology	Description	Important Contributors
Structuralism	Uses the method of introspection to identify the basic elements or “structures” of psychological experience	Wilhelm Wundt, Edward B. Titchener
Functionalism	Attempts to understand why animals and humans have developed the particular psychological aspects that they currently possess	William James
Psychodynamic	Focuses on the role of our unconscious thoughts, feelings, and memories and our early childhood experiences in determining behavior	Sigmund Freud, Carl Jung, Alfred Adler, Erik Erickson
Behaviorism	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	John B. Watson, B. F. Skinner
Cognitive	The study of mental processes, including perception, thinking, memory, and judgments	Hermann Ebbinghaus, Sir Frederic Bartlett, Jean Piaget
Social-cultural	The study of how the social situations and the cultures in which people find themselves influence thinking and behavior	Fritz Heider, Leon Festinger, Stanley Schachter

History of Psychology

Date	Psychologist(s)	Description
428 to 347 BCE	Plato	Greek philosopher who argued for the role of nature in psychological development.
384 to 432 BCE	Aristotle	Greek philosopher who argued for the role of nurture in psychological development.
1588 to 1679 CE	Thomas Hobbes	English philosopher.
1596 to 1650	René Descartes	French philosopher.
1632 to 1704	John Locke	English philosopher.
1712 to 1778	Jean-Jacques Rousseau	French philosopher.
1801 to 1887	Gustav Fechner	German experimental psychologist who developed the idea of the “just noticeable difference” (JND), which is considered to be the first empirical psychological measurement.
1809 to	Charles Darwin	British naturalist whose theory of natural selection

Date	Psychologist(s)	Description
1882		influenced the functionalist school and the field of evolutionary psychology.
1832 to 1920	Wilhelm Wundt	German psychologists who opened one of the first psychology laboratories and helped develop the field of structuralism.
1842 to 1910	William James	American psychologists who opened one of the first psychology laboratories and helped develop the field of functionalism.
1849 to 1936	Ivan Pavlov	Russian psychologist whose experiments on learning led to the principles of classical conditioning.
1850 to 1909	Hermann Ebbinghaus	German psychologist who studied the ability of people to remember lists of nonsense syllables under different conditions.
1856 to 1939	Sigmund Freud	Austrian psychologist who founded the field of psychodynamic psychology.
1867 to 1927	Edward Bradford Titchener	American psychologist who contributed to the field of structuralism.
1878 to 1958	John B. Watson	American psychologist who contributed to the field of behaviorism.
1886 to 1969	Sir Frederic Bartlett	British psychologist who studied the cognitive and social processes of remembering.

Date	Psychologist(s)	Description
1896 to 1980	Jean Piaget	Swiss psychologist who developed an important theory of cognitive development in children.
1904 to 1990	B. F. Skinner	American psychologist who contributed to the school of behaviorism.
1926 to 1993	Donald Broadbent	British cognitive psychologist who was a pioneer in the study of attention.
20th and 21st centuries	Linda Bartoshuk; Daniel Kahneman; Elizabeth Loftus; Geroge Miller.	American psychologists contributed to the cognitive school of psychology by studying learning, memory, and judgment. An important contribution is the advancement of the field of neuroscience. Daniel Kahneman won the Nobel Prize in Economics for his work on psychological decision making.
1850	Dorothea Dix	Canadian psychologist known for her contributions to mental health and opened one of the first mental hospitals in Halifax, Nova Scotia.
1880	William Lyall; James Baldwin	Canadian psychologists who wrote early psychology texts and created first Canadian psychology lab at the University of Toronto.
1950	James Olds; Brenda Milner; Wilder Penfield; Donald Hebb; Endel Telving	Canadian psychologists who contributed to neurological psychology and opened the Montreal Neurological Institute.
1960	Albert Bandura	Canadian psychologist who developed 'social learning

Date	Psychologist(s)	Description
		theory' with his Bobo doll studies illustrating the impact that observation and interaction has on learning.
1970	Hans Selye	Canadian psychologist who contributed significantly in the area of psychology of stress.

Although psychology has changed dramatically over its history, the most important questions that psychologists address have remained constant. Some of these questions were discussed below:

- Nature versus nurture.*** Are genes or environment most influential in determining the behavior of individuals and in accounting for differences among people? Most scientists now agree that both genes and environment play crucial roles in most human behaviors, and yet we still have much to learn about how nature (our biological makeup) and nurture (the experiences that we have during our lives) work together (Harris, 1998; Pinker, 2002). *The proportion of the observed differences of characteristics among people (e.g., in terms of their height, intelligence, or optimism) that is due to genetics* is known as the **heritability of the characteristic**, and we will make much use of this term in the chapters to come. We will see, for example, that the heritability of intelligence is very high (about .85 out of 1.0) and that the heritability of extraversion is about .50. But we will also see that nature and nurture interact in complex ways, making the question “Is it nature or is it nurture?” very difficult to answer.
- Free will versus determinism.*** This question concerns the extent to which people have control over their actions. Are we the products of our environment, guided by forces out of our control, or are we able to choose the behaviors we engage in? Most of us like to believe in free will, that we can do what we want—for instance, that we could get up right now and go fishing. Our legal system is premised on the concept of free will; we punish criminals because we believe that they have a choice over their behaviors and freely choose to disobey the law. But as we will discuss later in the research focus in this section, recent research has suggested that we may have less control over our behavior than we think we do (Wegner, 2002).
- Accuracy versus inaccuracy.*** To what extent are humans’ good information processors? Although it appears that people are good enough to make sense of the world around them and to make decent decisions (Fiske, 2003), they are far from perfect. Human judgment is sometimes compromised by inaccuracies in our thinking styles and by our motivations and emotions. For instance, our judgment may be affected by our desires to gain material wealth and to see ourselves positively and by emotional responses to the events that happen to us. Many studies have explored decision-making in crises such as natural disasters, human error, or criminal

action, such as in the cases of the Tylenol poisoning, the Maple Leaf meats listeriosis outbreak, the SARS epidemic, or the Lac-Mégantic train derailment, etc.

- ***Conscious versus unconscious processing.*** To what extent are we conscious of our actions and the causes of them, and to what extent are our behaviors caused by influences that we are not aware of? Many of the major theories of psychology, ranging from the Freudian psychodynamic theories to contemporary work in cognitive psychology, argue that much of our behavior is determined by variables that we are not aware of.
- ***Differences versus similarities.*** To what extent are we all similar, and to what extent are we different? For instance, are there basic psychological and personality differences between men and women, or are men and women by and large similar? And what about people from different ethnicities and cultures? Are people around the world generally the same, or are they influenced by their backgrounds and environments in different ways? Personality, social, and cross-cultural psychologists attempt to answer these classic questions.

1. 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, a *tabula 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 favour 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.

2. 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's 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.

3. Functionalism and Evolutionary Psychology

In contrast to Wundt, who attempted to understand the nature of consciousness, William James and the other members of the **school of functionalism** aimed to *understand why animals and humans have developed the particular psychological aspects that they currently possess* (Hunt, 1993). 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). 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). Evolutionary psychology accepts the functionalists' basic assumption, namely that many human psychological systems, including memory, emotion, and personality, serve key adaptive functions. 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 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). 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). Nevertheless, the evolutionary approach is important to psychology because it provides logical explanations for why we have many psychological characteristics.

4. 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 they 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 (1885-1952), 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 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). 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.

5. 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.

The most famous behaviorist was Burrhus Frederick (B. F.) Skinner (1904 to 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, 1972).

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 and 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.

6. Gestalt psychology (Max Wertheimer Psychology)

The word "gestalt" means "form, pattern or whole." Gestalt psychologists believed that psychology should study human experience as a "whole," not in terms of separate elements as the structuralists would contend. Their slogan, "the whole is greater than the sum of its parts" conveyed the idea that meaning is often lost when psychological events are broken down; only when these pieces are analyzed together and the whole pattern is visible do we find true meaning in our experiences. To use an example, imagine breaking apart the words you are now reading into individual letters and scattering them as you wish across the page. Would you be able to discern anything meaningful from them? Quite likely, you wouldn't. Only when the letters are properly combined to form words and then structured into sentences do you grasp any true meaning. The "whole" then becomes something different, something greater than the accumulation of its "parts."

Gestalt psychologists, such as Max Wertheimer, did extensive work on various aspects of cognition, including perception, problem-solving and thinking. Additionally, their insistence on studying individuals and experiences as wholes is still preserved in psychology today. Their

work also led to the emergence of a form of psychotherapy widely practiced by modern psychologists.

7. Humanistic Psychology (Carl Rogers Psychology)

With the rise of each school of thought mentioned previously, the landscape of psychology was gradually taking shape. However, not all were satisfied with the way things were progressing. Foremost among these dissatisfied individuals were the humanistic psychologists, such as Carl Rogers, who were uncomfortable with the highly deterministic view of two of the major forces in psychology - psychoanalysis and behaviorism. Determinism is the idea that our actions are controlled by forces beyond our control. For the psychoanalysts, these forces are unconscious; for the behaviorists, they exist in our environment. Humanistic psychologists, however, viewed humans as free agents capable of controlling their own lives (as opposed to being controlled), making their own choices, setting goals and working to achieve them. Humanism asserted a positive view of human nature, stressing that humans are inherently good. A unique form of therapy also emerged out of this school of thought, with emphasis on helping people to achieve their full potential. This differed greatly from psychoanalysis which only focused on reducing maladaptive behavior.

8. 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, increasing numbers of psychologists began to consider 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 (1920-2012), 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 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.

9. Social-Cultural Psychology

A final school, which takes a higher level of analysis, and which has had a 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), that we develop our own beliefs and attitudes by comparing our opinions to those of others (Festinger, 1954), 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). 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). Cultures influence every aspect of our lives, and it is not inappropriate to say that our culture defines our lives just as much as our evolutionary experience (Mesoudi, 2009). Psychologists have found that there is a fundamental difference in social norms between Western cultures (including those in Canada, the United States, 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 grades 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). 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. In Canada, 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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