

A summary of Biological, Psychodynamic, Evolutionary, Behavioral Perspectives, and briefly the Humanistic

The Biological Perspective: The Brain and Behavior

Humans have long sought to understand the role of biological factors in their behavior. At the center of this quest lies a philosophical question that has tested and bested the greatest minds of the ages: the so called mind-body problem: The concept of mind-the inner agent of consciousness and thought-has its roots in antiquity. Yet its very nature has been debated down through the ages. Is it a spiritual entity separate from the body, or is it part of our body's activities?

The ancient Greeks could not agree on the vital question of how mind and body are related. Pythagoras, Plato, and Hippocrates all believed that the brain is the seat of the mind and the intellect. Aristotle disagreed, believing that the mind is located in the heart. Many of the Greeks as well as other philosophers held a position of mind-body dualism, the belief that the mind is a spiritual entity that is not subject to the physical laws that govern the body. This view implies that no amount of research on the body could ever hope to unravel the mysteries of the mind.

An alternative view of mind-body relations is derived from the Greek word *monos*, meaning "one." Monism holds that the "mind" is not a separate spiritual entity. Mind and body are one, and mental events are simply a product of physical events. In the modern view, these physical events are electrical and chemical processes occurring in the brain. If this is so, then questions about mental functions can be studied scientifically, for we can potentially measure these physical processes. Most modern scientists hold the view that mind and body are one, and many who hold a biological perspective would agree with this somewhat provocative statement by physiological psychologists Richard Thompson and Daniel Robinson:

... answers to the great questions of psychology will ultimately be found in "physiology." Higher organisms, after all, are simply brains with a few minor appendages. All behavior, all experience, all feeling, indeed all the subject matter of psychology, are nothing more than the outcomes of the activity of the nervous system. (Thompson & Robinson, 1979, p. 449)

Charles Whitman was a University of Texas student who murdered 14 with a high-powered rifle while perched in a high tower overlooking the campus. He was stopped by police fire. Police found a letter he had written the night before where he complained of severe headaches and overwhelming violent impulses. In the case of Charles Whitman's murderous behavior, a biological perspective would attach great importance to the headaches he reported in his letter and the brain tumor found during his autopsy. The biological perspective thus focuses on the physical side of human nature. It emphasizes the role of our highly developed brain; the biochemical processes that underlie our every thought, emotion, and action.

Discovery of Brain-Behavior Relations

Because the biological perspective focuses on processes that are largely invisible to the naked eye, its development has depended on scientific and technological developments. Perhaps the most important discovery for the future science of psychology concerned the electrical nature of nerve conduction. In a landmark experiment in the late 1700s, the Italian scientist Luigi Galvani discovered that the severed leg of a frog would move if an electrical current was applied

to it. Galvani's reports were ridiculed by dualist philosophers who believed that all bodily movements were caused by spiritual forces from the soul, but further experiments confirmed Galvani's findings. Soon many experiments on electrical nerve conduction were under way, borne on a wave of excitement about the discovery of "nervous energy." By 1870, researchers at the University of Berlin were applying electrical stimulation directly to the exposed brains of experimental animals. They discovered that stimulation of specific areas on the surface of the brain resulted in movements of particular muscles in the body. Soon they were able to "map" the areas on the brain's surface that controlled movement in various body regions. During this same period, many clinical reports appeared linking damage in specific areas of the brain with behavioral impairments of various kinds. For example, it was found that damage to a region on the left side of the brain resulted in the loss of the ability to understand or produce language.

As psychology entered the 20th century, the study of brain-behavior relations was still in its infancy. Karl Lashley, perhaps the most important figure in the early development of biological psychology in America, was interested in brain mechanisms in learning. His approach was to create lesions (damage) in specific brain regions and to study their effects on the learning and memory abilities of experimental animals who had been trained to run mazes. Lashley's research inspired many other attempts to study brain-behavior relations experimentally and to map the areas of the brain that are involved in specific psychological functions.

In 1929, the invention of the electroencephalogram (EEG) allowed researchers to measure the electrical activity of large areas of the brain through electrodes attached to the scalp. Scientists could now study brain-wave correlates of behaviors and states of consciousness without invading the brain. Yet, the EEG is primitive compared with more recent technical tools. For example, tiny microelectrodes now permit the recording of electrical activities from individual brain cells. The electron microscope has made it possible to study formerly invisible brain structures. New computer-based imaging techniques have provided ways of watching the electrochemical activities that are the bases for thought, emotion, and behavior. Biochemical research has shown that the brain's electrical activity is controlled by chemical substances released by nerve cells. The role of these neurotransmitter substances in both normal and abnormal behavior is one of the most important areas of current research.

Evolutionary Perspective: From Darwin to Evolutionary Psychology today.

As thinking and acting organisms, we go back a long way-long before our birth. Our species exists today because of our ancestors' ability to adapt, both biologically and behaviorally, to a changing and often hostile environment. Whereas the study of brain functioning often focuses on biological processes that occur in thousandths of a second, another portion of the biological perspective focuses on processes that may occur over thousands of generations. Darwin's evolutionary theory. Charles Darwin casts a giant shadow in the history of scientific thought. In 1859, his book *On the Origin of Species* generated shock waves that are still felt today in the debates between creationists and evolutionists. Darwin was not the first to suggest the possibility of evolution in animals, but his theory was the most plausible and best documented. It was vigorously opposed, however, for it seemed to many a denial of philosophical and religious beliefs about the exalted nature of human beings.

Darwin's theory was stimulated by observations made during a five-year voyage on a British research vessel that explored the coasts of South America, Australia, South Africa, and many South Atlantic and South Pacific islands. Darwin was struck by the many differences

between seemingly similar species who lived in different environments. He began to view these differences as ways in which the species had adapted to these environments.

In his theory of evolution, Darwin proposed that species evolve over time in response to environmental conditions through a process called natural selection, or "survival of the-fittest." Natural selection means that any inheritable characteristic that increases the likelihood of survival will be maintained in the species because individuals having the characteristic will be more likely to survive and reproduce. The underlying principle is that members of a given species differ naturally in many ways. Some possess specific traits to a greater extent than others do. If any of those traits give some members a competitive advantage over others, such as increasing their ability to attract mates, escape danger, and acquire food, these members are more likely to survive and pass those genes on to their offspring. In this way, the presence of adaptive traits will increase within the population over generations. In contrast, characteristics that reduce chances for survival will be eliminated from the species over time because creatures having such characteristics will be less likely to survive.

The characteristics favored by natural selection are not always positive ones. Sometimes natural selection favors the lesser of two evils. An example is sickle cell disease, a genetically caused blood disorder that is prevalent among people of African descent. Although the long-term effect of the sickle cell gene is to lower life expectancy, it does have one redeeming quality: It offers protection against malaria. Because people having the sickle cell gene were more likely to survive malaria epidemics, the prevalence of sickle cell disorder among African people increased over time (Nascutiu, 1997).

Darwin assumed that the principle of natural selection could be applied to all living things, including human beings. Contrary to a popular misconception, Darwin did not propose that humans are the direct descendants of modern apes. Rather, he believed that both human beings and apes branched off from a common ancestor in the distant past.

Modern evolutionary psychology

Evolutionary psychology is an emerging discipline that focuses on the role of evolution in the development of human behavior. Psychologists in this field stress that an organism's biology determines its behavioral capabilities, and its behavior (including its mental abilities) determines whether or not it will survive. In this manner, successful human behavior evolved along with a changing body (Buss, 1995; Tooby & Cosmides, 1992).

The notion that evolutionary pressures have stimulated the development of brain mechanisms that allow us to learn, think, reason, and socialize more effectively is generally accepted today. However, one evolutionary theory (and there are many theories) is more controversial. Sociobiology (Wilson, 1980) holds that complex social behaviors are also built into the human species as products of evolution. Sociobiologists argue that natural selection favors behaviors that increase the ability to pass on one's genes to the next generation. These social behaviors include aggression, competition, and dominance in males, and cooperative and nurturing tendencies in females. Indeed, one's genetic survival (i.e., transmission of one's genes) is more important than one's own physical survival in the eyes of sociobiologists. This principle is even used to explain certain "altruistic" behaviors, including giving up one's life to save children or relatives. Although such behavior is hardly in the survival interests of the individual, it serves a higher purpose: It keeps one's genes alive in the gene pool to live on in our ancestors (Sober & Wilson, 1998).

The Psychodynamic Perspective: (The Forces Within)

I don't know why I did it. . . . Often in my life, I have done things I had decided not to do. Something-whatever that may be-goes into action; "it" goes to the woman I don't want to see anymore, "it" makes the remark to the boss that costs me my head, "it" keeps on smoking when I have decided to quit, and then quits smoking just when I've accepted the fact that I'm a smoker and always will be. (Schlink, 1997, p. 20)

Have you ever felt mystified by why you did something that seemed "out of character"? If so, you are not alone, for each of us is a unique person with an individual pattern of traits, emotions, motives, and inner conflicts.

The psychodynamic perspective searches for the causes of behavior within the workings of our personality, emphasizing the role of unconscious processes and unresolved conflicts from the past. The first and most influential psychodynamic theory was Sigmund Freud's theory of psychoanalysis.

Although the shadowy underworld of hidden motives and meanings has enticed thinkers throughout history, humans have traditionally viewed themselves as creatures ruled by reason and conscious thought. But late in the 19th century, as the aftershocks produced by Darwin's evolutionary theory were still being felt throughout the intellectual world, Sigmund Freud (1856-1939) mounted a second and equally shocking assault on the prevailing conception of human beings as rational, civilized creatures. Unlike Darwin, however, Freud emphasized the role of complex psychological forces in controlling human behavior. He called the theory that he developed psychoanalysis—the analysis of internal psychological forces.

As a young Viennese medical student in the early 1880s, Freud was intensely interested in the workings of the brain (Miller, 1991). He began to focus his attention on the treatment of hysteria, a psychological disorder in which physical symptoms such as blindness, pain, or paralysis develop without any apparent organic cause. This disorder was erroneously thought to be specific to women, hence the diagnostic label derived from the Greek word *hystera*, which means "womb." Freud treated hysterical women, first by using hypnosis and later by using a technique called free association, in which the patient was to say whatever came to mind and to let one association lead freely to another, even if the order did not seem logical or rational. To Freud's surprise, his female patients consistently reported and relived painful and long-"forgotten" childhood sexual experiences. After reliving these experiences, Freud reported, the patients' symptoms often showed considerable improvement.

Even though Freud was the product of a Victorian culture that regarded sexuality as a taboo topic, he at first believed the reports of sexual abuse given by his clients. Later, perhaps in response to the cries of outrage from the medical and scientific communities that threatened to ruin his career, he concluded that, in all likelihood, most of these childhood sexual experiences had never actually occurred. Freud was now faced with the problem of explaining how the "reliving" of events that had never actually occurred could abolish the symptoms of hysteria. He became convinced that his patients were prompted to create these fantasies because of a compelling and unsatisfied sexual drive that is a universal aspect of human nature.

Freud also observed that sexual material often emerged in dreams and in slips of the tongue (so-called "Freudian slips"). These observations, plus an intensive period of self-analysis, led Freud to propose that much of human behavior is influenced by forces of which we are unaware. He claimed that we have inborn sexual and aggressive drives, and he believed that our

adult personality is strongly influenced by early childhood experiences and by the ways in which we cope with the internal forces that govern our behavior as we grow up.

Freud speculated that because early sexual desires and needs are punished, we learn to fear them and become anxious when we are aware of their presence. Consequently, to cope with our anxiety, we develop psychological techniques called defense mechanisms. One of the most important defense mechanisms is repression, which protects us by keeping anxiety-arousing impulses, feelings, and memories in the unconscious depths of the mind. There they remain as sources of energy, continually striving for release. All behavior, whether it is normal or abnormal, is a reflection of the never-ending and largely unconscious internal struggle between the conflicting psychological forces of the impulses and the defenses. This ongoing psychological struggle between conflicting energy forces is dynamic in nature, hence the term psychodynamic. To explain Charles Whitman's shooting rampage, Freud would surely point to the "overwhelming violent impulses" to which Whitman referred in his letter, explaining that these impulses exploded into action when the defenses that held them in check finally shattered in the face of unbearable life stresses.

Freud wrote numerous works of great psychological and literary significance, but he was not a conventional scientist. Freud was opposed to any attempts to explore psychoanalytic theory through laboratory research, believing that his clinical observations and personal self-analysis were far more valid "data" (Rosenzweig, 1992). Many contemporary psychologists view Freud's theory as difficult to test. Nevertheless, Freud's ideas have stimulated considerable psychological research on topics as diverse as dreams, the effects of child-rearing practices, memory, aggression, sex roles, moral development, defense mechanisms, psychological disorders, and psychological treatment. In one scholarly analysis of research based on Freud's ideas, Seymour Fisher and Roger Greenberg (1995) surveyed more than 3,000 studies in the scientific literature. Some of Freud's ideas were supported by subsequent research, whereas others were unsupported or directly contradicted. But even where psychoanalytic theory was not supported, the research it inspired has led to many important discoveries and helped stimulate the development of new theories. Psychoanalytic theory may be the best example of the truism that a theorist doesn't have to be "right" about everything (or even about most things) in order to make a notable scientific contribution.

Links with psychodynamic concepts can be found within other areas of psychological science. For example, scientists working within the biological perspective have identified brain mechanisms that can produce emotional reactions of which we are consciously unaware (LeDoux, 2000). Freud, who was himself trained within the biological perspective, clearly recognized the importance of studying behavior with different methods and from several vantage points when he wrote, "Let the biologists go as far as they can, and let us go as far as we can. One day the two will meet" (Freud, 1900, p. 276).

Some of Freud's ideas about mental events are also helping to stimulate new theoretical advances and research within the cognitive perspective (Bucci, 1997; Erdelyi, 1995). Cognitive scientists have shown that many aspects of information processing occurs outside of our awareness (Wegner, 2000). Moreover, mental events that lie beyond the focus of our awareness, such as our self-concept and social stereotypes, can influence our thoughts, feelings, and behaviors. Thus, while Freud's vision of the unconscious mind as a seething cauldron of painful memories and destructive impulses is not accepted by most contemporary psychological scientists, the concept of a kinder, gentler unconscious endures, as does the notion that many of our behaviors are triggered by subconscious processes (Bargh & Chartrand, 1999; Kirsch & Lynn, 1999; Westen, 1998).

The Behavioral (Learning) Perspective: The Power of the Environment

The behavioral perspective focuses on the role of the external environment in shaping and governing our actions. From this perspective, people's behavior is jointly determined by learned habits fashioned by their previous life experiences and by stimuli in their immediate environment. Particular emphasis is placed on the effect of rewards and punishment in shaping behavior (Rachlin, 1995).

Origins of the Behavioral Perspective

The behavioral perspective is rooted in a seventeenth-century school of philosophy known as British empiricism, which held that all ideas and knowledge are gained empirically—that is, through the senses. According to John Locke (1632-1704), one of the early empiricists, the human mind is initially "white paper void of all characters, without any ideas: How comes it to be furnished? To this I answer, in one word, from experience" (*An Essay Concerning Human Understanding*, 1690). Human beings are born as a *tabula rasa*—a blank tablet—and then shaped by their environment. Empiricism also maintained that observation is a more valid approach to knowledge than is reason. To empiricists, seeing was believing, whereas reasoning was fraught with the potential for error. This idea has been enormously influential in the development of science, whose methods are rooted in empirical observation.

In the early 1900s Ivan Pavlov, a Russian physiologist, reported experiments that demonstrated "involuntary" learning in dogs. Pavlov showed that dogs would learn to salivate to the sound of a "new" stimulus, such as a tone, if that stimulus were paired a number of times with the appearance of food. In the United States, meanwhile, researchers were studying more complex forms of learning in both animals and humans. Learning was to be the medium through which experience made its mark on Locke's "white paper void of all characters."

Behaviorism

In the 1920s, behaviorism, a school of thought that emphasizes environmental control of behavior through learning, emerged as an outspoken alternative to the cognitive and psychodynamic perspectives. John B. Watson (1878-1958) was the leader of the new movement. Watson strongly opposed the "mentalism" of the psychoanalysts. He argued that the proper subject matter of psychology was observable behavior, not unobservable inner consciousness. Human beings, he said, are products of their conditioning experiences, and their behavior can be controlled completely by manipulating their environment. So passionately did Watson hold this position that in 1924 he issued the following challenge:

Give me a dozen healthy infants, well-formed, and my own specialized world to bring them up in and I'll guarantee you to take anyone of them 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. (p. 82)

Clearly, the behaviorists' approach of examining behavior strictly from the "outside" differs a great deal from our usual approach to understanding our inner selves. This approach is spoofed in the tongue-in-cheek story of the radical behaviorist who, after making love, turned to his partner and said, "That was great for you. How was it for me?"

Because of the behaviorists' belief that we are who we are because of what we learn, they devoted their efforts to discovering the laws that govern learning and performance. Behaviorists believed that the same basic principles of learning apply to all organisms, and their research with both humans and animals led to many discoveries and applications of these principles. Many would argue that the discovery of the laws of learning was the greatest contribution made by American psychology in the first half of the 20th century.

The leading modern figure in behaviorism was B. F. Skinner (1904-1990) of Harvard University. Although Skinner did not deny that mental events, images, and feelings occur within us, he maintained that these are themselves behaviors and not causes. "No account of what is happening inside the human body, no matter how complete, will explain the origins of human behavior," he insisted (Skinner, 1989, p. 18). For Skinner, there was no room for the "mind" or unobservable "mental events" in a scientific account of the causes of human behavior. Indeed, Skinner believed that a focus on inner factors would lead psychology astray by diverting attention from the real causes of behavior, which reside in the outer world. He insisted that "A person does not act upon the world, the world acts upon him" (Skinner, 1971, p. 211).

As expressed eloquently in his novel, *Walden Two* (Skinner, 1948), Skinner believed that the power of the environment could be harnessed for good or for evil. If human beings are to be changed, indeed saved, Skinner maintained, we must manipulate the environment that controls behavior through its pattern of rewards and punishments. Skinner believed that large-scale control over human behavior is possible today but that the chief barrier to creating a better world through "social engineering" is an outmoded conception of people as free agents. Needless to say, this was a highly controversial position. Skinner's view was considered extreme by many psychologists, but he was esteemed for his scientific contributions to the study of learning, for the force of his intellect, and for focusing attention on the power of environmental forces and how they could be used to enhance human welfare. In the 1960s, behaviorism inspired powerful techniques of behavior change that were known collectively as behavior modification. These techniques, which continue to be used today, proved to be effective ways to change problem behaviors and increase positive ones by manipulating the environmental factors that control the behavior (Martin & Pear, 1998). Overall, however, the influence of radical behaviorism waned after the 1970s, when it was overtaken by the cognitive revolution (Robins et al., 1999).

Our text mentions the Humanistic Movement, so I've included a bit about it.

The Humanistic Perspective: Freedom and Self-Actualization

As noted earlier, Freud's theory acted as a lightning rod. So did the tenets of radical behaviorism. Many rejected the images of humans being controlled by destructive and unconscious forces or by the external environment, and they offered competing images of human nature. The humanistic perspective arose largely out of philosophical schools that emphasize free will, innate tendencies toward growth, and the attempt to find ultimate meaning in one's existence (Moss, 1998). Like psychoanalytic theorists, humanistic theorists emphasize the role of internal personality processes, but in contrast to the psychoanalytic emphasis on unconscious determinants of behavior, humanists stress the importance of conscious motives, freedom, and choice. Humanistic theorists believe that in every human being there is an active force toward growth and self-actualization, the reaching of one's individual potential. When the human personality unfolds in a benign and supportive environment that allows these creative forces free rein, the positive inner nature of a person emerges. Human misery and pathology, in contrast, are fostered by environments that frustrate the innate tendencies toward self-actualization. In sharp contrast to the image of humans ruled by unconscious dynamics or external stimuli, humanistic theorists like Rollo May (1961), Carl Rogers (1983), and R. D. Laing (1967) insist that our existence and its meaning are squarely in our own hands, for we alone can decide what our attitudes and behaviors will be.

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