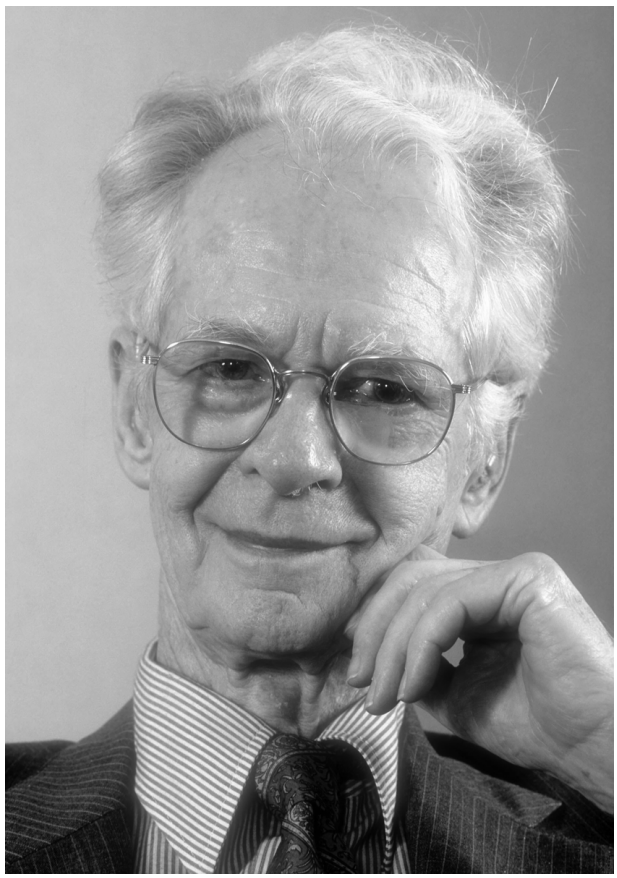
SKINNER, B(URRHUS) F(REDERIC)
1904–1990

Burrhus Frederic Skinner (1904–1990) is considered by many to be the most influential psychologist of all time and by some to be one of the most influential people in history. A research scientist, author, and philosopher, his work has had a lasting impact on psychology, education, psychotherapy, psychopharmacology, philosophy, and even the business world.

Skinner was born March 20, 1904, in the small town of Susquehana, in Pennsylvania, the son of a lawyer father and a housewife mother. He earned his undergraduate degree at Hamilton College in New York, intending to become a professional writer. Soon discouraged, a book about behaviorism by psychologist John B. Watson inspired him to enter graduate school at Harvard University in 1928. There his extraordinary mechanical skills allowed him to invent a series of devices for studying rat behavior. Ultimately one of those devices, subsequently known as the Skinner Box, gave him unprecedented control over ongoing behavior, summarized in his first book, *The Behavior of Organisms: An Experimental Analysis* (1938).



B. F. Skinner, April 1, 1987. **YVONNE HEMSEY/GETTY IMAGES.**

Behaviorists inspired by the work of Russian physiologist Ivan Pavlov (1849–1936) had focused on relatively simple stimulus-response reflexes, whereas Skinner was able to show a high degree of orderliness in more common, fluid, everyday behavior, which Skinner called *operant behavior*. Skinner showed that a great deal of behavior that appeared to be spontaneous and voluntary was the product of a "history of reinforcement," and he also showed how a *reinforcer* (a stimulus that strengthens the behavior it follows) could be delivered in optimal ways to alter future behavior. In a major breakthrough, Skinner showed that entirely new behaviors could quickly be taught simply by selectively reinforcing successive approximations to that behavior, a process he called *shaping*.

During the 1940s, 1950s, and 1960s, Skinner extended his laboratory discoveries to a number of practical human domains. During World War II he trained pigeons to guide missiles for the U.S. military (a project never fully implemented). In 1948 Skinner published a novel called *Walden Two,* in which he speculated about how a science of behavior might be used to create an ideal community. During the 1950s, in work with psychotic patients, he laid the foundations for modern *behavior therapy*, a term that was coined by his research team. He also invented sophisticated mechanical teaching machines and developed the first programmed textbook, advances which helped lead the way toward modern computer-aided instruction.

During the 1960s Skinner's students and adherents guided by his numerous essays on education (brought together in 1968 in his book, *The Technology of Teaching*) developed successful reinforcement-based classroom management techniques, which were subsequently widely used in countries around the world. His work also inspired business professionals to develop new management techniques and incentive systems, and professionals working with developmentally disabled individuals were inspired to develop powerful new training and treatment techniques, which later became standard in virtually all treatment facilities for such individuals.

In its impact on education, Skinner's work is similar to that of Edward L. Thorndike. In the late 1890s, while a graduate student at Harvard, Thorndike conducted animal experiments that convinced him of the enormous power of behavioral consequences, which led to Thorndike's formulation of the Law of Effect, which remains influential in education in the early 2000s. Thorndike's experiments had been relatively crude and were conducted in open chambers. Skinner eventually learned how to conduct such experiments in closed chambers, which eliminated distractions and the need for handling the animals, thus allowing

Skinner to determine much more precisely how behavior actually works. It was the precision in Skinner's research that helped lay the foundations for a true science of both animal and human behavior.

SEE ALSO *Operant Conditioning.*

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Robert Epstein

SOCIAL COGNITIVE THEORY

Social cognitive theory (SCT) refers to a psychological model of behavior that emerged primarily from the work of Albert Bandura (1977; 1986). Initially developed with an emphasis on the acquisition of social behaviors, SCT continues to emphasize that learning occurs in a social context and that much of what is learned is gained through observation. SCT has been applied broadly to such diverse areas of human functioning as career choice, organizational behavior, athletics, and mental and physical health. SCT also has been applied extensively by those interested in understanding classroom motivation, learning, and achievement (Pajares, 1996; Schunk & Zimmerman, 1994; 1998).

SCT rests on several basic assumptions about learning and behavior. One assumption concerns triadic reciprocality, or the view that personal, behavioral, and environmental factors influence one another in a bidirectional, reciprocal fashion. That is, a person's on-going functioning is a product of a continuous interaction between cognitive, behavioral, and contextual factors. For instance, classroom learning is shaped by factors within the academic environment, especially the reinforcements experienced by oneself and by others. At the same time, learning is affected by students' own thoughts and self-beliefs and their interpretation of the classroom context.

A closely related assumption within SCT is that people have an agency or ability to influence their own behavior and the environment in a purposeful, goal-directed fashion (Bandura, 2001). This belief conflicts with earlier forms of behaviorism that advocated a more rigorous form of environmental determinism. SCT does not deny the importance of the environment in determining behavior, but it does argue that people can also, through forethought, self-reflection, and self-regulatory processes, exert substantial influence over their own outcomes and the environment more broadly.

A third assumption within SCT is that learning can occur without an immediate change in behavior or more broadly that learning and the demonstration of what has been learned are distinct processes. One reason for this separation is that SCT also assumes that learning involves not just the acquisition of new behaviors, but also of knowledge, cognitive skills, concepts, abstract rules, values, and other cognitive constructs. This division of learning and behavior is a shift from the position advocated by behavioral theories that defined learning stridently as a change in the form or frequency of behavior. It also means that students can learn but not demonstrate that learning until motivated to do so.

HISTORICAL ORIGINS OF SCT

Born in 1925, Albert Bandura was trained and began his career in the mid-twentieth century when explanations of human functioning, including classroom learning, were dominated by behavioral models advocated by researchers such as B. F. Skinner, Clark Hull, Kenneth Spence, and Edward Tolman. In this context, Bandura, along with his students and colleagues, initiated a series of studies designed to examine social explanations for why and when children displayed aggressive behaviors. These studies demonstrated the value of modeling for acquiring novel behaviors and provided initial evidence for the separation of learning and performance. They also indicated the importance of the learner's perceptions of the environment generally, of the person modeling a behavior specifically, and of the learner's expectations regarding the consequences of behavior. In doing so, findings from this systematic research contradicted assumptions within behavioral models that learning was the result of trial and error learning or that changes in behavior were due primarily to the consequences of one's own actions.

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An Encyclopedia

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