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## Behaviorism as Corner Stone of Pedagogical Method

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### Abstract

This paper attempts to study Behaviorism a systematic approach to understanding the behavior of humans and application to **pedagogical methods**. Behavior is either a reflex evoked by the pairing of certain antecedent stimuli in the environment, or a consequence of that individual's history, including especially reinforcement and punishment contingencies, together with the individual's current motivational state and controlling stimuli. Although behaviorists generally accept the important role of heredity in determining behavior, they focus primarily on environmental events. Behaviorism emerged in the early 1900s as a reaction to depth psychology and other traditional forms of psychology, which often had difficulty making predictions that could be tested experimentally, but derived from earlier research in the late nineteenth century, such as when Edward Thorndike pioneered the law of effect, a procedure that involved the use of consequences to strengthen or weaken behavior.

Behaviourism focuses on one particular view of learning: a change in external behaviour achieved through using reinforcement and repetition (Rote learning) to shape behavior of learners. Skinner found that behaviors could be shaped when the use of reinforcement was implemented. Desired behavior is rewarded, while the undesired behavior is not rewarded. Incorporating behaviorism into the classroom allowed educators to assist their students in excelling both academically and personally. In the field of language learning, this type of teaching was called the audio-lingual method, characterised by the whole class using choral chanting of key phrases, dialogues and immediate correction.

Within the behaviourist view of learning, the "teacher" is the dominant person in the classroom and takes complete control, evaluation of learning comes from the teacher who decides what is right or wrong. The learner does not have any opportunity for evaluation or reflection within the learning process, they are simply told what is right or wrong. The conceptualization of learning using this approach could be considered "superficial," as the focus is on external changes in behaviour, i.e., not interested in the internal processes of learning leading to behaviour change and has no place for the emotions involved in the process

Keywords: Behaviorism, Learning Theory. psychological study, emotions

## Introduction

In 1924 publication, John B. Watson devised methodological behaviorism, which rejected introspective methods and sought to understand behavior by only measuring observable behaviors and events. It was not until the 1930s that B. F. Skinner suggested that covert behavior—including cognition and emotions—is subject to the same controlling variables as observable behavior, which became the basis for his philosophy called radical behaviorism. While Watson and Ivan Pavlov investigated how (conditioned) neutral stimuli elicit reflexes in respondent conditioning, Skinner assessed the reinforcement histories of the discriminative (antecedent) stimuli that emits behavior; the technique became known as operant conditioning. The application of radical behaviorism—known as applied behavior analysis—is used in a variety of contexts, including, for example, applied animal behavior and organizational behavior management to treatment of mental disorders, such as autism and substance abuse. In addition, while behaviorism and cognitive schools of psychological thought do not agree theoretically, they have complemented each other in the cognitive-behavior therapies, which have demonstrated utility in treating certain pathologies, including simple phobias, PTSD, and mood disorders.

Operant conditioning was developed by B.F. Skinner in 1937 and deals with the management of environmental contingencies to change behavior. In other words, behavior is controlled by historical consequential contingencies, particularly reinforcement—a stimulus that increases the probability of performing behaviors, and punishment—a stimulus that decreases such probability. The core tools of consequences are either positive (presenting stimuli following a response), or negative (withdrawn stimuli following a response).

The following descriptions explains the concepts of four common types of consequences in operant conditioning:

**Positive reinforcement:** Providing a stimulus that an individual enjoys, seeks, or craves, in order to reinforce desired behaviors. For example, when a person is teaching a dog to sit, they pair the command "sit" with a treat. The treat is the positive reinforcement to the behavior of sitting. The key to making positive reinforcement effect is to reward the behavior immediately.

**Negative reinforcement:** Removing a stimulus that an individual does not desire to reinforce desired behaviors. For example, a child hates being nagged to clean his room. His mother reinforces his room cleaning by removing the undesired stimulus of nagging after he has cleaned. Another example would be putting on sunscreen before going outside. The negative effect is getting a sunburn, so by putting on sunscreen, the behavior in this case, you avoid the stimulus of getting a sunburn.

**Positive punishment:** Providing a stimulus that an individual does not desire to decrease undesired behaviors. An example of this would be spanking. If a child is doing something they have been warned not to do, the parent might spank them. The undesired stimulus would be the spanking, and by adding this stimulus, the goal is to have that behavior avoided. The key to this technique is that even though the title says positive, the meaning of positive here is "to add to." So, in order to stop the behavior, the parent adds the adverse stimulus (spanking). The biggest problem

with this type of training though is that the trainee doesn't usually learn the desired behavior, rather it teaches the trainee to avoid the punisher.

**Negative punishment:** Removing a stimulus that an individual desires in order to decrease undesired behaviors. An example of this would be grounding a child for failing a test. Grounding in this example is taking away the child's ability to play video games. As long as it is clear that the ability to play video games was taken away because they failed a test, this is negative punishment. The key here is the connection to the behavior and the result of the behavior.

Classical experiment in operant conditioning, for example, the Skinner Box, "puzzle box" or operant conditioning chamber to test the effects of operant conditioning principles on rats, cats and other species. From the study of Skinner box, he discovered that the rats learned very effectively if they were rewarded frequently with food. Skinner also found that he could shape the rats' behavior through the use of rewards, which could, in turn, be applied to human learning as well.

Skinner's model was based on the premise that reinforcement is used for the desired actions or responses while punishment was used to stop the responses of the undesired actions that are not. This theory proved that humans or animals will repeat any action that leads to a positive outcome, and avoiding any action that leads to a negative outcome. The experiment with the pigeons showed that a positive outcome leads to learned behavior since the pigeon learned to peck the disc in return for the reward of food.

These historical consequential contingencies subsequently lead to (antecedent) stimulus control, but in contrast to respondent conditioning where antecedent stimuli elicit reflexive behavior, operant behavior is only emitted and therefore does not force its occurrence. It includes the following controlling stimuli:

**Discriminative stimulus (Sd):** An antecedent stimulus that increases the chance of the organism engaging in a behavior. One example of this occurred in Skinner's laboratory. Whenever the green light (Sd) appeared, it signaled the pigeon to perform the behavior of pecking because it learned in the past that each time it pecked, food was presented (the positive reinforcing stimulus).

**Stimulus delta (S-delta):** An antecedent stimulus that signals the organism not to perform a behavior since it was extinguished or punished in the past. One notable instance of this occurs when a person stops their car immediately after the traffic light turns red (S-delta). However, the person could decide to drive through the red light, but subsequently receive a speeding ticket (the positive punishing stimulus), so this behavior will potentially not reoccur following the presence of the S-delta.

**Objective:**

This paper intends to explore and analyze why **Behaviorism or the behavioral learning theory** is a popular concept that focuses on how students learn. Also how Behaviorism focuses on the idea that all behaviors are learned through interaction with the environment.

**Educational & Behavioral Learning Theories**

Behavioral genetics: Proposed in 1869 by Francis Galton, a relative of Charles Darwin.

Interbehaviorism: Proposed by Jacob Robert Kantor before B. F. Skinner's writings.

Methodological behaviorism: John B. Watson's behaviorism states that only public events (motor behaviors of an individual) can be objectively observed. Although it was still acknowledged that thoughts and feelings exist, they were not considered part of the science of behavior. It also laid the theoretical foundation for the early approach behavior modification in the 1970s and 1980s.

Psychological behaviorism: As proposed by Arthur W. Staats, unlike the previous behaviorisms of Skinner, Hull, and Tolman, was based upon a program of human research involving various types of human behavior. Psychological behaviorism introduces new principles of human learning. Humans learn not only by animal learning principles but also by special human learning principles. Those principles involve humans' uniquely huge learning ability. Humans learn repertoires that enable them to learn other things. Human learning is thus cumulative. No other animal demonstrates that ability, making the human species unique.

Radical behaviorism: Skinner's philosophy is an extension of Watson's form of behaviorism by theorizing that processes within the organism—particularly, private events, such as thoughts and feelings—are also part of the science of behavior, and suggests that environmental variables control these internal events just as they control observable behaviors. Although private events cannot be directly seen by others, they are later determined through the species' overt behavior. Radical behaviorism forms the core philosophy behind behavior analysis. Willard Van Orman Quine used many of radical behaviorism's ideas in his study of knowledge and language.

Teleological behaviorism: Proposed by Howard Rachlin, post-Skinnerian, purposive, close to microeconomics. Focuses on objective observation as opposed to cognitive processes.

Theoretical behaviorism: Proposed by J. E. R. Staddon, adds a concept of internal state to allow for the effects of context. According to theoretical behaviorism, a state is a set of equivalent histories, i.e., past histories in which members of the same stimulus class produce members of the same response class (i.e., B. F. Skinner's concept of the operant). Conditioned stimuli are thus seen to control neither stimulus nor response but state. Theoretical behaviorism is a logical extension of Skinner's class-based (generic) definition of the operant.

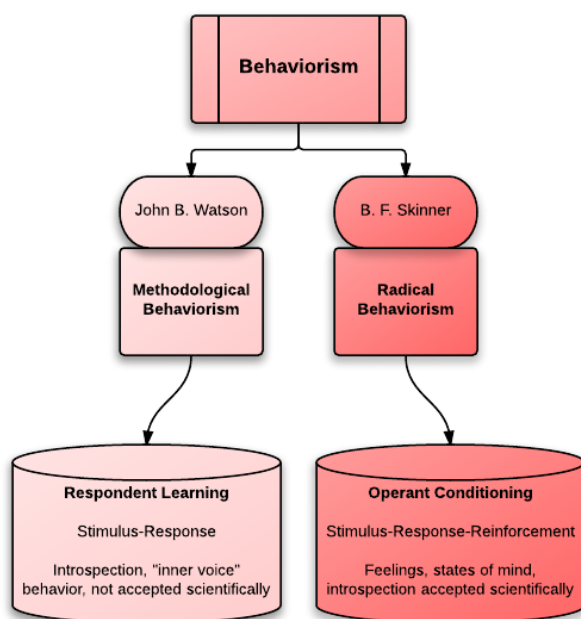
Two subtypes of theoretical behaviorism are:

Hullian and post-Hullian: theoretical, group data, not dynamic, physiological

Purposive: Tolman's behavioristic anticipation of cognitive psychology

B. F. Skinner proposed radical behaviorism as the conceptual underpinning of the experimental analysis of behavior. This viewpoint differs from other approaches to behavioral research in various ways, but, most notably here, it contrasts with methodological behaviorism in accepting feelings, states of mind and introspection as behaviors also subject to scientific investigation. Like methodological behaviorism, it rejects the reflex as a model of all behavior, and it defends the science of behavior as complementary to but independent of physiology. Radical behaviorism overlaps considerably with other western philosophical positions, such as American pragmatism.

Although John B. Watson mainly emphasized his position of methodological behaviorism throughout his career, Watson and Rosalie Rayner conducted the renowned Little Albert experiment (1920), a study in which Ivan Pavlov's theory to respondent conditioning was first applied to eliciting a fearful reflex of crying in a human infant, and this became the launching point for understanding covert behavior (or private events) in radical behaviorism. However, Skinner felt that aversive stimuli should only be experimented on with animals and spoke out against Watson for testing something so controversial on a human.



**Main Reference:**

Schuh, K. L., & Barab, S. A. (2007). Philosophical perspectives. In J. M. Spector, M. D. Merrill, J. Van Merriënboer, & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (3rd ed., pp. 67-82). New York, NY: Routledge/Taylor & Francis Group.

In 1959, Skinner observed the emotions of two pigeons by noting that they appeared angry because their feathers ruffled. The pigeons were placed together in an operant chamber, where they were aggressive as a consequence of previous reinforcement in the environment. Through stimulus control and subsequent discrimination training, whenever Skinner turned off the green light, the pigeons came to notice that the food reinforcer is discontinued following each peck and responded without aggression. Skinner concluded that humans also learn aggression and possess such emotions (as well as other private events) no differently than do nonhuman animals.

## Experimental and conceptual innovations

This essentially philosophical position gained strength from the success of Skinner's early experimental work with rats and pigeons, summarized in his books *The Behavior of Organisms* and *Schedules of Reinforcement*. Of particular importance was his concept of the operant response, of which the canonical example was the rat's lever-press. In contrast with the idea of a physiological or reflex response, an operant is a class of structurally distinct but functionally equivalent responses. For example, while a rat might press a lever with its left paw or its right paw or its tail, all of these responses operate on the world in the same way and have a common consequence. Operants are often thought of as species of responses, where the individuals differ but the class coheres in its function-shared consequences with operants and reproductive success with species. This is a clear distinction between Skinner's theory and S–R theory.

Skinner's empirical work expanded on earlier research on trial-and-error learning by researchers such as Thorndike and Guthrie with both conceptual reformulations—Thorndike's notion of a stimulus-response "association" or "connection" was abandoned; and methodological ones—the use of the "free operant", so-called because the animal was now permitted to respond at its own rate rather than in a series of trials determined by the experimenter procedures. With this method, Skinner carried out substantial experimental work on the effects of different schedules and rates of reinforcement on the rates of operant responses made by rats and pigeons. He achieved remarkable success in training animals to perform unexpected responses, to emit large numbers of responses, and to demonstrate many empirical regularities at the purely behavioral level. This lent some credibility to his conceptual analysis. It is largely his conceptual analysis that made his work much more rigorous than his peers, a point which can be seen clearly in his seminal work *Are Theories of Learning Necessary?* in which he criticizes what he viewed to be theoretical weaknesses then common in the study of psychology. An important descendant of the experimental analysis of behavior is the Society for Quantitative Analysis of Behavior.

## Relation to language

As Skinner turned from experimental work to concentrate on the philosophical underpinnings of a science of behavior, his attention turned to human language with his 1957 book *Verbal Behavior* and other language-related publications; *Verbal Behavior* laid out a vocabulary and theory for functional analysis of verbal behavior, and was strongly criticized in a review by Noam Chomsky.

Skinner did not respond in detail but claimed that Chomsky failed to understand his ideas, and the disagreements between the two and the theories involved have been further discussed. Innateness theory, which has been heavily critiqued, is opposed to behaviorist theory which claims that language is a set of habits that can be acquired by means of conditioning. According to some, the behaviorist account is a process which would be too slow to explain a phenomenon as complicated as language learning. What was important for a behaviorist's analysis of human behavior was not language acquisition so much as the interaction between language and overt behavior. In an essay republished in his 1969 book *Contingencies of Reinforcement*, Skinner took the view that humans could construct linguistic stimuli

that would then acquire control over their behavior in the same way that external stimuli could. The possibility of such "instructional control" over behavior meant that contingencies of reinforcement would not always produce the same effects on human behavior as they reliably do in other animals. The focus of a radical behaviorist analysis of human behavior therefore shifted to an attempt to understand the interaction between instructional control and contingency control, and also to understand the behavioral processes that determine what instructions are constructed and what control they acquire over behavior. Recently, a new line of behavioral research on language was started under the name of relational frame theory.

## Conclusion

Behaviorism as an educational learning theory led to the development of several aspects of instruction and learning production, some of which we still use in classrooms today, including direct instruction, lecture, behavioral objective as classroom management, behavioral reward system, positive reinforcement, and individualized instruction, among other notions.

Using this Behavioral Management System, a teacher can reward AND take away points dependent on in-class behavior. Sounds and images reflect the addition or taking away of points, so good behavior is easily reinforced and bad behavior is also easily discouraged.

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