Behavioral Psychology

3.1 Behaviorism (or **behaviourism**), is an approach to psychology that combines elements of philosophy, methodology, and theory. It emerged in the early twentieth century as a reaction to "mentalistic" psychology, which often had difficulty making predictions that could be tested using rigorous experimental methods.

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 *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 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, this process that the behaviorists define is a very slow and gentle process 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.

Education

Behaviourism focuses on one particular view of learning: a change in external behaviour achieved through a large amount of repetition of desired actions, the reward of good habits and the discouragement of bad habits. In the classroom this view of learning led to a great deal of repetitive actions, praise for correct outcomes and immediate correction of mistakes. 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 project-based learning (PBL) environment, students may be encouraged to engage with the learning process and their peers within the group by positive reinforcement from a skilled facilitator to increase positive actions of engagement, contributions and questioning. Negative behaviours e.g. lack of engagement, negative contributions, could be minimized by the facilitator using negative reinforcement. 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 the process.

Operant conditioning

Operant conditioning was developed by B.F. Skinner in 1937 and deals with the modification of "voluntary behaviour" or operant behaviour. Operant behavior operates on the environment and is maintained by its consequences. Reinforcement and punishment, the core tools of operant conditioning, are either positive (delivered following a response), or negative (withdrawn following a response). Skinner created the *Skinner Box* or operant conditioning chamber to test the effects of operant conditioning principles on rats.

Classical conditioning

Although operant conditioning plays the largest role in discussions of behavioral mechanisms, classical conditioning (or Pavlovian conditioning or respondent conditioning) is also an important behavior-analytic process that need not refer to mental or other internal processes. Pavlov's experiments with dogs provide the

most familiar example of the classical conditioning procedure. In simple conditioning, the dog was presented with a stimulus such as a light or a sound, and then food was placed in the dog's mouth. After a few repetitions of this sequence, the light or sound by itself caused the dog to salivate. Although Pavlov proposed some tentative physiological processes that might be involved in classical conditioning, these have not been confirmed.

Molar versus molecular behaviorism

Skinner's view of behavior is most often characterized as a "molecular" view of behavior; that is, behavior can be decomposed into atomistic parts or molecules. This view is inconsistent with Skinner's complete description of behavior as delineated in other works, including his 1981 article "Selection by Consequences." Skinner proposed that a complete account of behavior requires understanding of selection history at three levels: biology (the natural selection or phylogeny of the animal); behavior (the reinforcement history or ontogeny of the behavioral repertoire of the animal); and for some species, culture (the cultural practices of the social group to which the animal belongs). This whole organism then interacts with its environment. Molecular behaviorists use notions from melioration theory, negative power function discounting or additive versions of negative power function discounting.

Molar behaviorists, such as Howard Rachlin, Richard Herrnstein, and William Baum, argue that behavior cannot be understood by focusing on events in the moment. That is, they argue that behavior is best understood as the ultimate product of an organism's history and that molecular behaviorists are committing a fallacy by inventing fictitious proximal causes for behavior. Molar behaviorists argue that standard molecular constructs, such as "associative strength," are better replaced by molar variables such as rate of reinforcement. Thus, a molar behaviorist would describe "loving someone" as a pattern of loving behavior over time; there is no isolated, proximal cause of loving behavior, only a history of behaviors (of which the current behavior might be an example) that can be summarized as "love."

In philosophy

Behaviorism is a psychological movement that can be contrasted with philosophy of mind. The basic premise of *radical behaviorism* is that the study of behavior should be a natural science, such as chemistry or physics, without any reference to hypothetical inner states of organisms as causes for their behavior. Less radical

varieties are unconcerned with philosophical positions on internal, mental and subjective experience. Behaviorism takes a functional view of behavior. According to Edmund Fantino and colleagues: “Behavior analysis has much to offer the study of phenomena normally dominated by cognitive and social psychologists. We hope that successful application of behavioral theory and methodology will not only shed light on central problems in judgment and choice but will also generate greater appreciation of the behavioral approach.”.

Behaviorist sentiments are not uncommon within philosophy of language and analytic philosophy. It is sometimes argued that Ludwig Wittgenstein, defended a behaviorist position (e.g., the *beetle in a box* argument), but while there are important relations between his thought and behaviorism, the claim that he was a behaviorist is quite controversial. Mathematician Alan Turing is also sometimes considered a behaviorist, but he himself did not make this identification. In *logical and empirical positivism* (as held, e.g., by Rudolf Carnap and Carl Hempel), the meaning of psychological statements are their verification conditions, which consist of performed overt behavior. W.V. Quine made use of a type of behaviorism, influenced by some of Skinner's ideas, in his own work on language. Gilbert Ryle defended a distinct strain of philosophical behaviorism, sketched in his book *The Concept of Mind*. Ryle's central claim was that instances of dualism frequently represented "category mistakes," and hence that they were really misunderstandings of the use of ordinary language. Daniel Dennett likewise acknowledges himself to be a type of behaviorist, though he offers extensive criticism of radical behaviorism and refutes Skinner's rejection of the value of intentional idioms and the possibility of free will.

This is Dennett's main point in "Skinner Skinned." Dennett argues that there is a crucial difference between explaining and explaining away… If our explanation of apparently rational behavior turns out to be extremely simple, we may want to say that the behavior was not really rational after all. But if the explanation is very complex and intricate, we may want to say not that the behavior is not rational, but that we now have a better understanding of what rationality consists in. (Compare: if we find out how a computer program solves problems in linear algebra, we don't say it's not really solving them, we just say we know how it does it. On the other hand, in cases like Weizenbaum's ELIZA program, the explanation of how the computer carries on a conversation is so simple that the right thing to say seems to be that the machine isn't really carrying on a conversation, it's just a trick.)

— Curtis Brown, *Philosophy of Mind*, "Behaviorism: Skinner and Dennett"

21st-century behavior analysis

As of 2007, modern-day behaviorism, known as "behavior analysis," is a thriving field. The Association for Behavior Analysis: International (ABAI) currently has 32 state and regional chapters within the United States. Approximately 30 additional chapters have also developed throughout Europe, Asia, South America, and the South Pacific. In addition to 34 annual conferences held by ABAI in the United States and Canada, ABAI held the 5th annual International conference in Norway in 2009. The independent development of behaviour analysis outside the US also continues to develop, for example in 2013 the UK society for Behaviour Analysis was founded in order to further the advancement of the science and practice of behaviour analysis across the UK.

The interests among behavior analysts today are wide ranging, as a review of the 30 Special Interest Groups (SIGs) within ABAI indicates. Such interests include everything from developmental disabilities and autism, to cultural psychology, clinical psychology, verbal behavior, Organizational Behavior Management (OBM; behavior analytic I–O psychology). OBM has developed a particularly strong following within behavior analysis, as evidenced by the formation of the OBM Network and the influential *Journal of Organizational Behavior Management* (JOBM; recently rated the 3rd highest impact journal in applied psychology by ISI JOBM rating).

Applications of behavioral technology, also known as Applied Behavior Analysis or ABA, have been particularly well established in the area of developmental disabilities since the 1960s. Treatment of individuals diagnosed with autism spectrum disorders has grown especially rapidly since the mid-1990s. This demand for services encouraged the formation of a professional credentialing program administered by the Behavior Analyst Certification Board, Inc. (BACB) and accredited by the National Commission for Certifying Agencies. As of early 2012, there are over 300 BACB approved course sequences offered by about 200 colleges and universities world wide preparing students for this credential and approximately 11,000 BACB certificants, most working in the United States. The Association of Professional Behavior Analysts was formed in 2008 to meet the needs of these ABA professionals.

Modern behavior analysis has also witnessed a massive resurgence in research and applications related to language and cognition, with the development of Relational Frame Theory (RFT; described as a "Post-Skinnerian account of language and cognition"). RFT also forms the empirical basis for the highly successful and data-

driven Acceptance and Commitment Therapy (ACT). In fact, researchers and practitioners in RFT/ACT have become sufficiently prominent that they have formed their own specialized organization that is highly behaviorally oriented, known as the Association for Contextual Behavioral Science (ACBS). It has rapidly grown in its few years of existence to reach about 5,000 members worldwide.

Some of the current prominent behavior analytic journals include the *Journal of Applied Behavior Analysis* (JABA), the *Journal of the Experimental Analysis of Behavior* (JEAB) JEAB website, the *Journal of Organizational Behavior Management* (JOBM), *Behavior and Social Issues* (BSI), as well as the *Psychological Record*. Currently, the U.S. has 14 ABAI accredited MA and PhD programs for comprehensive study in behavior analysis.

Behavior analysis and culture

Cultural analysis has always been at the philosophical core of radical behaviorism from the early days (as seen in Skinner's *Walden Two*, *Science & Human Behavior*, *Beyond Freedom & Dignity*, and *About Behaviorism*.)

During the 1980s, behavior analysts, most notably Sigrid Glenn, had a productive interchange with cultural anthropologist Marvin Harris (the most notable proponent of "Cultural Materialism") regarding interdisciplinary work. Very recently, behavior analysts have produced a set of basic exploratory experiments in an effort toward this end. Behaviorism is also frequently used in game development, although this application is controversial.