

Social Scientist Handout - B. F. Skinner

Overview of Life:

- Burrhus Frederic Skinner, better known as B. F. Skinner, was born in 1904 in Pennsylvania and raised in a warm middle-upper class family.
- After graduating from Hamilton College in 1926, he studied at Harvard University and got his masters in psychology in 1930 and his doctorate in 1931.
- Later he married Yvonne Blue and had two daughters.
- He spent several years writing, teaching and researching at various universities before joining the Harvard faculty in 1948, where he remained for the rest of his life.
- He died on August 18, 1990 from leukemia.

Major Theory – Operant Conditioning:

- Skinner's theory of operant conditioning is a type of associative learning based on stimulus-response behaviour.
- The reinforcing stimulus, also called the reinforcer, can be either positive or negative.
- A positive reinforcer is a pleasant stimulus rewarded immediately after the behaviour. A negative reinforcer is taking away an unpleasant stimulus. Skinner's operant conditioning chamber also known as a Skinner Box, where he conducted experiments on pigeons and rats, clearly illustrates this.
- A rat is placed in the Skinner Box where there is a lever that when pressed releases food. When the rat accidentally presses the pedal and learns that food is released, the rat will press the lever repeatedly to receive food, demonstrating positive reinforcement.
- An example of negative reinforcement occurs when a rat is placed in the Skinner Box where there is a loud annoying sound, that can only be stopped by pressing the lever. When the rat learns that the noise can be stopped by pressing the lever, the rat will press the lever repeatedly to stop the sound.
- Therefore when a relationship is built between a response and a reinforcer, the operant (the behaviour), which in this case is the pressing of the lever, increases.
- To decrease a behaviour, extinction or punishment can be used. Extinction is the removal of a previously pleasant stimulus. For example, the lever no longer relates to food, hence the rat stops pushing the lever. Punishment is the unpleasant stimulus used immediately after the behaviour. For example, the rat stops pushing the lever when it gets shocked everytime the lever is pushed.
- Therefore, behaviour is changed or learned due to the consequences that follow.

Contribution to Teaching Methods – Programmed Instruction:

- Skinner also developed programmed instruction, in which learning material is presented in a sequence of small units that slowly increase with difficulty.
- He designed a teaching machine that presented students individually with questions to do, and feedback after each answer. It proved to be successful, as by the end, students were able to answer questions that they were unable to do in the beginning.
- Unfortunately, because of the cost, programmed instruction was put into book form which was less effective as students were able to read the answer before solving the problem.

Application of Theory:

- A simple example of applying operant conditioning is when training a dog to do a new trick. Everytime the dog does the trick, he is rewarded with a treat and therefore, because of this positive reinforcer the dog will learn the trick.
- Operant conditioning can also be applied in institutions such as psychiatric hospitals, juvenile halls, and prisons. For example, prisoners may get a token everytime he/she behaves appropriately. These tokens can then be traded for things like cigarettes, games, movies, time out of the cell etc. However, if the prisoner behaves poorly the token is taken away. Therefore, prisoners are more likely to behave well due to the consequences that follow.
- Programmed instruction is also widely used now, due to the invention of computers and the internet. For example, instead of giving an entire tutorial with a quiz at the end, tutorials are broken down into steps and require feedback after each step in order to advance to the new level. Programmed instruction has also helped children with autism to learn to communicate better.