

Learned behavior

Definition: Individuals adapt to changes in the environment through the process of learning. Traditionally learning was defined as any relatively permanent in behavior that results from past experience. However, because learned responses are not always performed, some psychologists prefer to define learning as any relatively permanent change in behavior or mental processes that results from past experience.

Three mechanisms of learning:

- classical conditioning (Pavlov)
- operant conditioning (Skinner)
- social learning (Bandura)

Classical conditioning:

○ **Pavlov's discovery**

One form of learning is classical conditioning. It occurs when a conditioned stimulus – CS, initially neutral stimulus – NS (such as a buzzer), is repeatedly paired with an unconditioned stimulus – UCS (such as meat powder on a dog's tongue), which naturally brings out an unconditioned response – UCR (such as salivation). Eventually the conditioned stimulus will elicit a response, known as the conditioned response – CR, even when the unconditioned stimulus is not presented.

○ **Establishing a conditioned response**

- In general, the strength of a conditioned response and the speed with which it is acquired increase as the intensity of the UCS increases. For example an infant cries when he sees the white robe (a painful injection – UCS, crying – UCR → CR, white robe - CS).

- Some stimuli, however, are easier to associate than others; organisms seem to be *biologically prepared* to learn certain associations.
- Up to a point, the strength of a conditioned response increase as *the number of CS – UCS pairings* increases
- The way stimuli are paired also determines the speed and strength of conditioning. *Delayed conditioning*, which means presenting the CS shortly before the UCS but removing both stimuli at the same time, is the most effective method of pairing the stimuli. This fact indicates that the CS has a predictive value for the UCS occurrence.

- ***What is learned in classical conditioning***

Classical conditioning involves learning that the CS predicts the occurrence of the UCS. The conditioned response that follows is not just an automatic, unvarying reflex but a response that accomplishes a function. Thus, classical conditioning produces an adaptive, automatic response to a signal that predicts an event.

- ***Conditioned responses over time***

If the UCS is no longer paired with the CS, the conditioned response eventually disappears; this is *extinction*. In addition, if the conditioned and unconditioned stimuli are paired once or twice after extinction, *reconditioning* occurs; that is, the conditioned response reverts to its original strength.

- ***Classical conditioning of human behavior***

- Classical conditioning plays a role in emotional disturbances, certain illnesses, and phobias.
- Classical conditioning principles also underlie techniques developed to treat cases of anxiety, allergies, and other common problems.

Operant conditioning

Instrumental conditioning is the process through which an organism learns to emit a response in order to obtain a reward or avoid an aversive stimulus.

- ***Instrumental conditioning versus operant conditioning***

The law of effect postulated by Edward Thorndike, holds that any response that produces a reward becomes more likely over time and any response that does not produce a reward becomes less likely over time. Skinner called this process operant conditioning, rather than instrumental conditioning. In operant conditioning the organism is free to respond at any time, and conditioning is measured by the rate of responding. In most respects, instrumental and operant conditioning are alike.

- ***Basic components of operant conditioning***

An operant is a response that has some effect on the world.

A reinforcer increases the probability that the operant preceding it will occur again; in other words, reinforcers strengthen behavior.

There are two types of reinforcers:

- *positive reinforcers*, which strengthen a response if they are presented after that response occurs
- *negative reinforcers*, which strengthen a response if they are removed after that response occurs

- ***Forming and strengthening operant behavior***

In general, operant conditioning proceeds more quickly when the delay in receiving reinforcement is short than when it is long, and when the reinforcement is large than when it is small.

Reinforcement may be delivered on a continuous reinforcement schedule or on partial or intermittent reinforcement schedule, depending on ratio (no of responses that lead to a reinforcement) or on time interval (time between two successive reinforcers).

Ratio schedules lead to a rapid rate of responding. Behavior learned through partial reinforcement is very resistant to extinction.

- **Analyzing reinforcers**

Psychologists do not know for sure what makes certain reinforcers, called primary reinforcers, inherently rewarding (for example: food, water, relief of pain). Secondary reinforcers are rewards people or animals learn to like because of their association with primary reinforcers (for example: money, smiles or other forms of social approval – like the words “good job”).

- **Negative reinforcement**

Both escape conditioning and avoidance conditioning are the results of negative reinforcement.

- Escape conditioning results when behavior terminates a negative reinforcer.
- Avoidance conditioning results when behavior avoids a negative reinforcer.

Behaviors learned through avoidance conditioning are very resistant to extinction.

- **Punishment**

Punishment decreases the frequency of a behavior by following it with an unpleasant stimulus or removal of a pleasant one.

Punishment modifies behavior but has several drawbacks:

- fear of punishment may generalize to the person doing the punishing
- it is ineffective when delayed
- it teach only what not to do, not what should be done to obtain reward

- **Operant conditioning of human behavior**

The principles of operant conditioning have been used in many spheres of life, from the teaching of everyday social skills to treatment of overeating and sleep disorders to classroom education.

Learned helplessness appears to result when behavior has no influence over its consequences.

Social learning

Studies of social learning indicate that learning can occur:

- through vicarious conditioning, which is the process of learning by seeing or hearing about the consequences of other's people actions
- without any reinforcement, through observational learning

Observational learning

- Through observational learning people can profit from other people's experience rather than "learning the hard way", by personally repeating those experiences.
- There are four requirements which determines that observational learning will occur:
 - o attention: you cannot learn unless you pay reasonably close attention to what is happening around you
 - o retention: you must not only attend to the observed behavior but also remember it at some later time
 - o ability to reproduce the behavior: you must be capable of performing the act
 - o motivation: in general you will perform the act only if there is some motivation or reason to do so
 - is more likely to occur when the person observed is rewarded and it is attractive and similar to the observer
- although it is vital to human development, observational learning can be a source of socially harmful behaviors (there is evidence, for example, that watching violent television programs may be a cause of violent behavior)

Skill learning

Observational learning along with practice plays an important role in the learning of skills

Strategies for learning skills efficiently include:

- distributed practice
- part-time training
- continued practice after a skill is learned is important to prevent forgetting
- the learning of one skill can transfer to aid performance of a similar skill