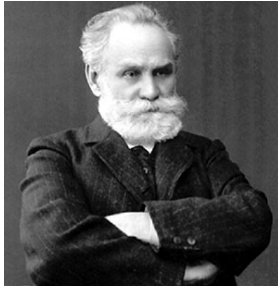


CLASSICAL CONDITIONING

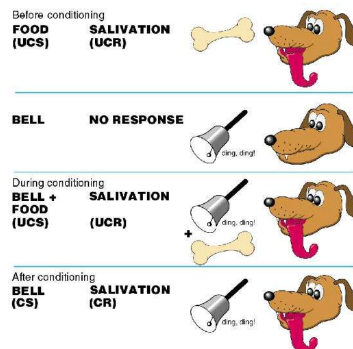
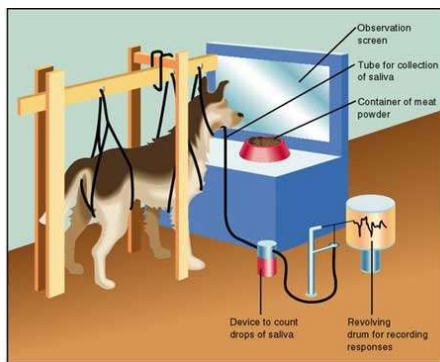
IVAN PETROVICH PAVLOV



Ivan Petrovich Pavlov was born to a Russian Orthodox priestly family in Ryazan in September 1849. He was a great physiologist and best known for his studies of reflex behavior. He was awarded a Nobel Prize in Physiology and Medicine in 1904 in relation to his researches in the area of digestive processes. He had become interested in the relationship between salivation and the digestive

process.

Pavlov's Experiment:



Pavlov conducted a number of experiments in dogs to study the relationship between stimuli and responses.

He kept a dog hungry

for a few days and then tied him to the experimental table which was fitted with certain mechanically controlled devices. By a simple surgical operation, the flow of saliva from the dog's mouth was transferred to a glass tube. The dog was made comfortable. The observer himself remained hidden from the dog but was able to view the experiment by means of a set of mirrors.

Arrangement was made to give food to the dog through an automatic mechanism and arranged a bell to ring every time when food was presented to the dog. At the sight of the food, the dog salivated. The activity of presenting food accompanied with the ringing of bell was repeated several times and the amount of saliva secreted was measured. After several trials the dog was given no food but the bell was rung. It was found that even the absence of food, the ringing of the bell caused the dog to secrete saliva.

In this experiment the conclusion was that, the dog learned to salivate at the sound of the bell. Pavlov regarded this salivation as being a *conditioned reflex* and designated the process by which the dogs had picked up this reflex *classical conditioning*.

Classical conditioning refers to “when we are pairing natural stimulus with neutral stimulus, it acquires all the characteristics of natural stimulus”. (here Neutral stimulus = Bell, natural stimulus= food)

This kind of learning in terms of conditioned responses was named as called as *Learning by Conditioning*. The process of strengthening a conditioned response through immediate association of Unconditioned Stimulus and Conditioned Stimulus is called ***Learning by Conditioning***.

Diagrammatic Representation of Classical Conditioning:

Before conditioning:

Food (US) → Salivation (UR)
Bell (CS) → No Salivation

During Conditioning:

Food (US) }
Bell (CS) } Salivation
→

After Conditioning:

Bell (CS) Salivation (CR)

IMPORTANT TERMS:

- **Conditioned Stimulus:** A neutral stimulus that has been paired with an unconditioned stimulus to bring about a response formerly caused only by the unconditioned stimulus. *Eg: Bell*
- **Unconditioned Stimulus:** A stimulus that brings about a response without having been learned. *Eg: Food*
- **Conditioned Response:** A response, that follows a previously neutral stimulus after conditioning. *Eg: Salivation*
- **Unconditioned Response:** A response that neutral and needs no training. *Eg: Salivation.*

Principles of Classical Conditioning:

Following his initial discovery, Pavlov spent more than three decades studying the processes underlying classical conditioning. He and his associates identified four main processes: acquisition, extinction, spontaneous recovery, generalization, discrimination and reinforcement.

1. Acquisition: (contiguity)

The *acquisition* phase is the initial learning of the conditioned response—for example, the dog learning to salivate at the sound of the bell. The most important factors regarding the speed of conditioning during the acquisition phase are the order and timing of the stimuli. Conditioning occurs most quickly when the conditioned stimulus (the bell) precedes the unconditioned stimulus (the food) by about half a second. Conditioning takes longer and the response is weaker when there is a long delay between the presentation of the conditioned stimulus and the unconditioned stimulus.

2. Extinction:

The term *extinction* is used to describe the elimination of the conditioned response by repeatedly presenting the conditioned stimulus without the unconditioned stimulus. If the dog has learned to salivate at the sound of a bell, an experimenter can gradually extinguish the dog's response by repeatedly ringing the bell without presenting food afterward.

3. Spontaneous recovery:

Once learned, a conditioned response is not necessarily permanent. After the extinction, when a conditioned response is no longer exist, the behaviour often reappears spontaneously but a reduced intensity. This phenomenon, that is , the reappearance of an apparently extinguished response after an interval is called spontaneous recovery.

4. Generalization:

After an animal has learned a conditioned response to one stimulus, it may also respond to similar stimuli without further training. If a child is bitten by a large black dog, the child may fear not only that dog, but other large dogs. This phenomenon is called *generalization*. *For example:-* The sound of an ice cream seller is familiar to all children. At the same time whenever a fish seller use this sound, generally children thinks that it is an ice cream seller.

5. Discrimination:

Discrimination is the opposite of generalization, in which an individual learns to produce a conditioned response to one stimulus but not to another stimulus that is similar. For example, a child may show a fear response to freely roaming dogs, but may show no fear to his own pet dog.

6. Reinforcement:

The term reinforcement refers to the following of the conditioned stimulus by the unconditioned stimulus. According to Pavlov it was only reinforcement that led to the conditioning. A particular behaviour is conditioned when it follows with proper reinforcement in time.

EDUCATIONAL IMPLICATIONS:

1. ***It helps develop desirable habits:*** Principles of classical conditioning can be used for developing good habits in children such as cleanliness, respect for elders, punctuality etc.
 2. ***It helps to eliminate undesirable habits:*** It can be used for deconditioning or breaking of anxiety, fear and phobias in maladjusted children. It helps the students learn to relax when facing anxiety provoking situations.
 3. ***It develops positive attitudes and interests:*** It can be used for developing positive attitude towards learning, teacher and school subject.
 4. ***It stress the use of Audio-Visual aids:*** in the teaching-learning process involves the classical conditioning. For example, the teacher shows the picture of a 'cow', along with the written word 'cow' and ask the student to say 'cow' every time the picture is presented.
 5. ***It stress the use of teaching aids:*** The principles of classical conditioning are used to teach alphabets and fundamental principles of arithmetic by using some concrete materials. For example, **A** for apple and **B** for bat, counting is taught with the help of beads etc.
 6. ***Importance of Reinforcement:*** The theory emphasis the need of reinforcement in learning. Children's learning becomes effective when they are rewarded immediately after they perform well.
 7. ***Avoid misbehavior of the teacher:*** A teacher with his defective methods of teaching or improper behaviour may condition a child to develop a distaste and hatred towards him, the subject he teaches and even to the school environment. At the same time affection, a loving attitude and sympathetic attitude given to the child may produce a desirable impact on the teacher.
 8. ***Link learning with positive emotions:*** Arrange repeated pairing of positive feelings with certain kinds of learning, especially subjects that are anxiety provoking.
- It is crystal clear that classical conditioning has multifarious implications in class room as well as outside the class room.