Pavlov's Classical Conditioning Theory

Classical conditioning is a type of learning which based on the association of a stimulus that does not ordinarily elicit a particular response with another stimulus that does elicit the response.

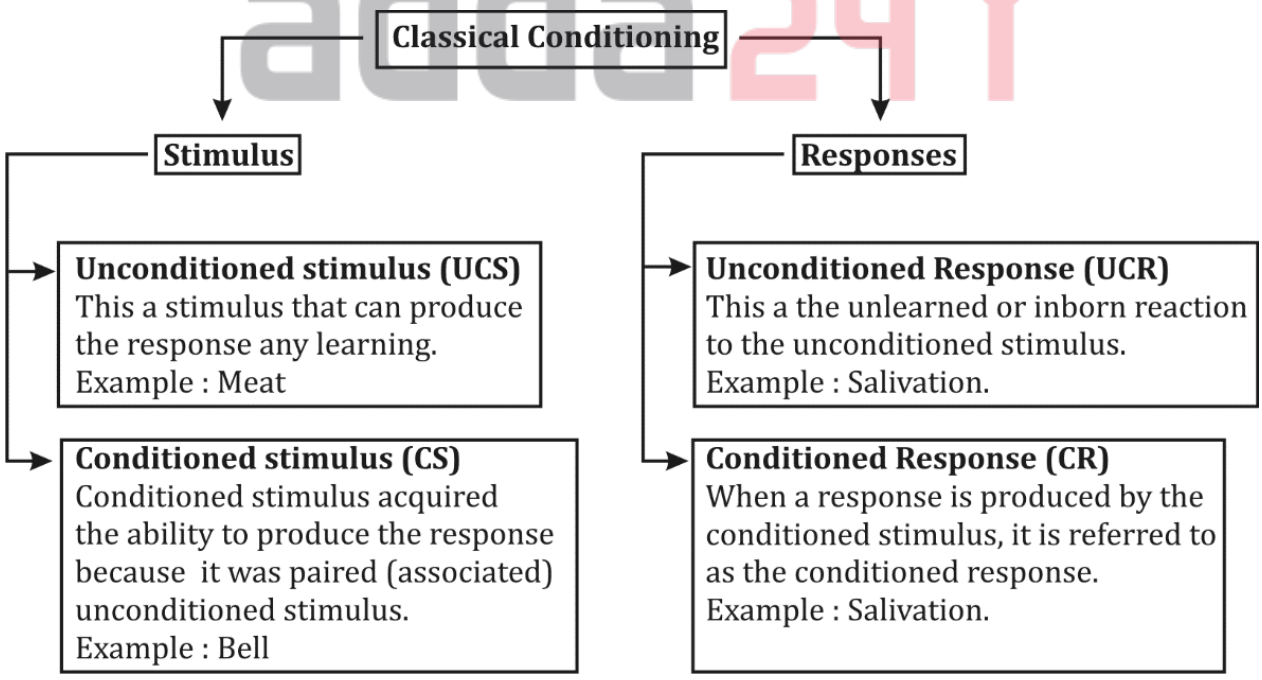
Pavlov's Experiments

Pavlov discovered classical conditioning almost by accident. Originally, he wanted to study the role of salivation in digestion. He measured how much saliva dogs produce when given meat. After a few days in the experiment, Pavlov noticed that the dogs in his laboratory started salivating when the lab attendant entered the room with the meat dish, before meat was placed in their mouth.

This aroused Pavlov's curiosity and he pursued the issue with more experiments. For example, he sounded a bell just before presenting his dogs with food. After hearing the bell many times right before getting fed, the dogs began to salivate as soon as the bell rang. In other word, the dogs had been conditioned to salivate in response to a new stimulus (the bell) that normally would not produce salivation. The dogs had learned to associate the bell with food.

Types of Stimulus and Response

In classical conditioning, there are 2 types of stimulus and 2 types of response. They are unconditioned stimulus, conditioned stimulus, unconditioned response, and conditioned response as explained in figure.



Step 1 - Before Conditioning

Before conditioning, the bell is neutral stimulus. Neutral stimulus (NS) is a stimulus that, before conditioning, does not naturally bring about the response of interest (Feldman, 2005).

NS (Bell) → No salivation

However, an unconditioned stimulus (UCS) can produce and unconditioned response (UCR).

UCS (Meat) → UCR (Salivation)

Step 2 - During Conditioning procedure

During the conditioning procedure, the neutral stimulus (NS) is presented. It is immediately followed by the unconditioned stimulus (UCS) to produce unconditioned response (UCR).

NS (Bell) + UCS (Meat) → UCR (Salivation)

Step 3 – Test of Conditioning

After the classical conditioning procedures, the neutral stimulus (NS) becomes a conditioned stimulus (CS). It alone can produce salivation. At the point, the production of salivation is known as the conditioned response (CR).

NS (Bell) → CR (Salivation)

Common Phenomena in Classical Conditioning

There are 3 common phenomena in classical conditioning, they are generalization, discrimination, and extinction. The descriptions for these phenomena are explained below.

Generalization :

Generalization occurs when similar stimuli to a CS produce the CR. A student may generalize his fear to physics and chemistry tests although he had performed poorly only on mathematics test. In this case, the physics and chemistry tests were similar stimuli to the mathematics test and they produced the CR by themselves.

Discrimination :

Discrimination is the opposite of generalization. It refers to the ability to differentiate between similar stimuli. For example, a student may feel fear during mathematics test but not during physics or chemistry tests. This shows that the student is able to discriminate between appropriate and in appropriate situations for a response.

Extinction :

Extinction is the process of unlearning a learned response because of the removal of the original source of learning. In classical conditioning, extinction is done by repeatedly presenting the CS without the US. This action will decrease the frequency of previously CR. Eventually, the CR disappears. In the example mentioned above, if the student repeatedly passes the mathematics tests, his fear of mathematics tests will disappear.