Classical Conditioning

Classical Conditioning is a form of learning in which two stimuli are presented together and the response originally elicited by one of them comes to be elicited by the other.

Classical Conditioning had its origin in the experiments of Ivan Petrovitch Pavlov (1849-1936) a Russian Physiologist. He was basically interested in studying the process of gastric secretion in dogs. He got nobel prize on his research on digestive process in the year 1904. During his experimental work on dogs, he accidentally noticed a phenomenon of secretion of saliva in dogs on the sight of the food or sound of caretaker's approaching foot steps. The salivating process, well before the food was put into the mouth of the dog, was called as psychic secretion. This psychic secretion was the basis of classical conditioning. He classify reflexes into two broad categories; physiological and psychic reflexes. Physiological reflex is an innate process which controls the amount of gastric secretion, depending on the kind and amount of food in the stomach of the organism. They are invariably shown by all animals of a given spices. Psychic reflexes (sometimes called as conditioned reflexes) occur only as a result of its particular experience. The dogs in Pavlov's experiments secreted saliva on the sometimes when we go to market, the perception or smell of sweets, cause salivation in our mouth.

The Experiment

Pavlov restricted his experimental studies to the process of secretion of saliva dogs. Food in the mouth of the organism produces saliva. When we put food in the mouth of the dog, the dog salivates. Pavlov noticed that, even the salivate when listen at the sound of the foot steps of the attendant who used to present the food. The sight of food or the sound of foot steps of experimenter were not natural stimuli to evoke salivation. This was a strange fact for Pavlov. He puzzled over this for a while, then began to study it systematically.

In one experiment a dog was kept hungry for the last 24 hours. It was trained to and quietly in a lose harness on a table in a room which was insuated against any tracking noise or vibration. The experimenter occupied an adjoining room, observing the dog through a small window and presenting the stimuli by means of automatic device. A metronome was sounded and 7 or 8 seconds after the beginning of this stimulus a plate containing small measured quantity of dry meat powder was presented with in reach of the dog's mouth. No salivation was evoked at first by the tick tock of the metronome. But during the eating there was a capious flow of salivation. Combinations of the metronome and food were presented three times during a daily session ,separated by intervals of 5 to 35 minutes. Strength of salivation was recorded by means of special device. After several combinations of the metronome and the food, the dog started salivating at the tick tock of the metronome. As a number of combination increased the number of drops of salivation also increased. The dog learned to salivate to the tick tock of the metronome. That is to say, the tick tock of the metronome also could cause the dog salivate.

This simple experiment established an important learning principle. When a dog expects food it automatically salivates. Salivation is a reflex action. But Pavlov discovered that the reflex action could be partly modified and associated with a new stimulus. Bell does not naturally cause salivating, but if it is as

associated with food it soon can stimulate the salivation response. For this reason classical conditioning as also called stimulus substitution. Diagrammatically the experiment appears as follows:

Metronome (CS) + Food (UCS)----------Salivation (UCR)

Metronome Sound (CS)----------Salivation (CR)

Metronome Sound XXX)----------No Salivation (Extinction)

Metronome Sound---------- Salivation (Spontaneous recovery)