Unit :II: Classical Conditioning Theory, Basic Principles, Cognitive Perspective And Applications. Operant Conditioning Theory, Basic Principles , Negative Reinforcement, Schedules Of Reinforcement, Cognitive Perspective And Applications.

Topic [UNIT:II]	HOURS
CLASSICAL CONDITIONING	6 HOURS
OPERANT CONDITIONING	8 HOURS

What is Learning?

Learning is a relatively permanent change in behaviour that occurs as a result of practice or experience ,not due to growth or maturation.(***Clifford T. Morgan, Richard A. King, John R. Weisz and John Schopler, 1993).***

This definition has three important elements :

1. ***Learning is a change in behaviour – for better or worse.***
2. ***It is a change that takes place through practice or experience---- change due to growth and maturation are not learning.***
3. ***Before it can be called learning , the change must be relatively permanent---it must last a fairly long time.***

CLASSICAL CONDITIONING

Classical conditioning is a form of learning in which a stimulus that previously did not elicit a response , in reflex like fashion after it is paired for one or more trials with a stimulus that already elicits a response. Reflex is a simple , relatively automatic stimulus-response sequence mediated by the system , for example , knee jerking or eye blinking response. Classical conditioning is mainly concerned with forming new reflexes. Here conditioning means relatively simple modification of behaviour and classical means in the established manner.

Pavlov's early work on Classical Conditioning

Pavlov restricted his experimental studies to the process of secretion of saliva in dogs. The model of classical conditioning is given below:

1] UCS---------- UR
(Food) (Saliva)

2] CS
(sound of bell)
+ ----------UR
UCS (Saliva)
(Food)

3] CS ---------- CR
(Sound of bell) (Saliva)

Important Concepts related to Classical Conditioning

Unconditioned Stimulus(UCS): a naturally occurring stimulus that leads to an involuntary response.

Unconditioned Response(UCR): an involuntary response to a naturally occurring or unconditioned stimulus.

Neutral Stimulus(NS): stimulus that has no effect on the desired response.

Conditioned Stimulus(CS): stimulus that becomes able to produce a learned reflex response by being paired with the original unconditioned stimulus.

Conditioned Response(CR): learned reflex response to a conditioned stimulus.

* Where, **UCS is Unconditioned Stimulus** and **UCR is Unconditioned Response**. Here food is UCS and salivation due to food is UCR. The stimulus is called UCS because the response depends upon no special condition and the response is unlearned and implies no pre-conditions.

* During his experimentation on dogs, Pavlov introduced a sound of bell, a **neutral stimulus** which evoked no response at the first presentation.

* After a number of pairing of neutral stimulus with UCS, the neutral stimulus is presented alone. If it succeeds in eliciting the response (salivation) then we call it **Conditioned Stimulus (CS)** and the response is called **Conditioned Response (CR).**

So, Classical Conditioning may be defined as ***" a process in which a neutral stimulus by pairing with a natural stimulus acquires all the characteristics of natural stimulus"***

Although classical conditioning happens quite easily, there are a ***few factors*** that researches have discovered:

1) ***The CS must come before the UCS***. If Pavlov rang the bell just after he gave the dogs the food, they did not become conditioned (Rescorla, 1988).

2) ***The CS and UCS must come very close together in time- ideally, only several seconds apart***. When Pavlov tried to stretch the time between the potential CS and the UCS to several minutes, no association was made. Too much could happen in the longer interval of time to interfere with conditioning (Pavlov,192 ;Wasserman & Miller, 1997).

3) ***The neutral stimulus must be paired with the UCS several times***, often many times, before conditioning can take place (Pavlov,1926).

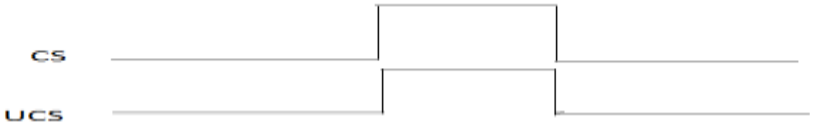
4) ***The CS is usually some stimulus that is distinctive or stands out from other competing stimuli.*** The bell was a sound that was not normally present in the laboratory and, therefore, distinct (Pavlov,192 ; Rescorla,1988).

Basic Principles of Classical Conditioning

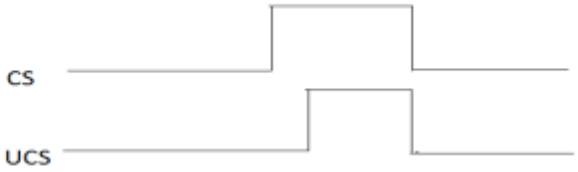
1) Acquisition: The process by which a conditioned stimulus acquires the ability to elicit a conditioned response through repeated pairings of an unconditioned stimulus with the conditioned stimulus. The time interval between the CS and UCS may be varied.

Temporal arrangement of the CS and UCS affects the acquisition of a conditioned response

a) Simultaneous Conditioning: A form of conditioning in which the conditioned stimulus (CS) and the unconditioned stimulus (UCS) begin and end at the same time.

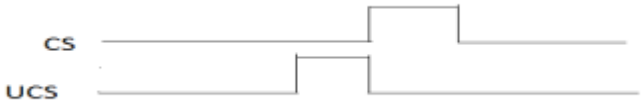


b) Delayed Conditioning: A form of conditioning in which the onset of the unconditioned stimulus (UCS) begins while the conditioned stimulus (CS) is still present.



c) Trace Conditioning: Here, the onset of the conditioned stimulus (CS) precedes the onset of the unconditioned stimulus (UCS) and the presentation of the CS and UCS does not overlap.

d) Backward Conditioning: A type of conditioning in which the presentation of the unconditioned stimulus (UCS) precedes the presentation of the conditioned stimulus(CS)



Several additional factors also appear to affect conditioning.

1) Intensity: Conditioning is faster when the intensity of either the conditioned or unconditioned stimulus increases (Kamin, 19 65).

2) Interval: Conditioning also depends on the time interval between presentations of the two stimuli. Extremely short intervals- less than 0.2 seconds-rarely produce conditioning. In animal research, the optimal CS-UCS interval seems to be between 0.2 and 2 seconds; longer intervals make it difficult for animals to recognize the conditioned stimulus as a signal for some future event (Gordon, 1989).

3) Familiarity: Familiarity can greatly affect conditioning. In contrast to the laboratory, where stimuli selected for study are often novel, many of the potential conditioning stimuli found in the environment are familiar to us. Thus, our day-to-day experiences often teach us that certain stimuli, such as the background noise usually present in an office setting or the odors ordinarily present in our homes, do not predict anything unusual. In other words, we learn that these stimuli are largely irrelevant, which makes it highly unlikely that these stimuli will come to act as a conditioned stimuli in the future (Baker & Mackintosh, 1977).

2) Extinction:

The process through which ***a conditioned stimulus gradually loses the ability to evoke conditioned responses when it is no longer followed by the unconditioned stimulus***. It is not dead and gone, ***it's just suppressed or inhibited*** by the lack of an association with the unconditioned stimulus.

Inhibition: Inhibition is a process in which a stimulus inhibits a response that would otherwise occur. Pavlov described two types of inhibition: Internal Inhibition and External Inhibition.

Reconditioning: The rapid recovery of a conditioned response (CR) to a CS-UCS pairing following extinction.

3) Spontaneous Recovery:

The ***reappearance of a weakened conditioned response to a conditioned stimulus after an interval of time following extinction*** is known as spontaneous recovery.

5) Stimulus generalization:

The ***tendency to respond to a stimulus that is only similar to the original conditioned stimulus with the conditioned response.*** For example, a person who reacts with anxiety to the sound of a dentist's drill machine react with some slight anxiety to a similar-sounding machine, such as an electric coffee grinder.

6) Stimulus discrimination:

The ***tendency to stop making a generalized response to a stimulus that is similar to the original conditioned stimulus because the similar stimulus is never paired with the unconditioned stimulus***. For example, although the sound of the coffee grinder might produce a little anxiety in the dental-drill-hating person, after a few uses that sound will no longer produce anxiety because it isn't associated with dental pain.

Higher Order Conditioning: Pavlov found that once conditioning has establishe, he could use the conditioned stimulus as an " unconditioned stimulus" that is to say, if the animal had been conditioned to salivate in response to a bell. Palov could use the bell to obtain conditioning to some other stimulus. This process is known as higher-order conditioning and the first new level is called second-order conditioning.

Diagram to show Higher-Order Conditioning

CS1 (Bell)---------- No consistent response

CR

US (Food)---------- UR (Salivation)

ORGINAL CONDITIONING

CS2 (Light)---------- No consistent response

CR2

CS1 (Bell)---------- CR 1 (Salivation)

Higher order conditioning

Conditioned Taste Aversion: A type of conditioning in which the UCS (usually internal cues associated with nausea or vomiting) occurs several hours after the CS (often a novel food) and leads to a strong CS-UCS association in a single trial. Conditioned taste aversions are important for survival because they inhibit the repeated ingestion of dangerous and toxic substances in animals' natural environments. Surveys show that food or beverage aversions are very common among humans (Logue, Logue & Strauss,1983; Logue, Ophir, & Sttrauss, 1981).

Classical Conditioning and Stimulus substitution:

This theory, which originated with Pavlov and was influential for many years, relies on the idea that the CS, simply as a result of pairing with the UCS, acquires the capacity to substitute for the UCS in evoking a response. In other words, an association- a link or a bond-is formed between the CS and the UCS so that the CS becomes the equivalent of the UCS in eliciting a response. But while the idea of stimulus substitution is appealingly simple, it is not currently accepted by most learning theories.

Classical conditioning and Drug Overdose: Knowledge of conditioning processes has helped to explain some instances of drug overdose. For example, it is well known that certain drugs become less effective over time. But why does this occur? One possibility is that when a person uses drugs repeatedly in a particular context, the stimuli in that environment become conditioned stimuli and so elicit a conditioned response (Siegel, 1983,1984). For certain addictive drugs, this conditioned response can be just the opposite of the unconditioned response (Siegel, 1975; Siegel et al., 1982).

Health professionals can use this knowledge to arrange environments that minimize relapse among former drug users by eliminating the cues that trigger conditioned responses.

Techniques based on principles of Classical Conditioning

1) Flooding: Systematic desensitization works by conditioning a new response (relaxation) to a previously feared stimulus. This approach to lessening fears is straightforward extinction. A fear-producing stimulus is presented by itself over and over again. Such direct presentation of a high-strength conditioned stimulus, either in imagination or in reality, is called flooding.

2) Aversion therapy: Another classical conditioning technique involving unpleasant stimulation is aversion therapy. Its objective is not to undo fear or revulsion but to induce such feelings, specifically in relation to stimuli that trigger unwanted behaviour.

3) Systematic Desensitization: It is a procedure in which relaxation and pleasant feelings are learned as conditioned responses to stimuli that once acted as fear producers.

Cognitive Perspective of Classical Conditioning

PREDICTION AND EXPECTATION :

The regular pairing of a conditioned stimulus with an unconditioned stimulus provides subjects with valuable ***predictive*** information; it indicates that whenever a conditioned stimulus is presented, an unconditioned stimulus will shortly follow. Thus, as conditioning proceeds, subjects acquire the ***expectation*** that a conditioned stimulus will be followed by an unconditioned stimulus, that is, a cognitive process takes place.

The idea that cognitive processes involving expectation play a role in classical conditioning is a thesis supported by several types of evidence (***Rescorla and Wagner, 1972***).

First, conditioning fails to occur when unconditioned and conditioned stimuli are paired in a random manner. For conditioning to occur, the CS-UCS pairing must be **consistent.**

Second, the cognitive thesis is supported by a phenomenon known as **blocking-** the fact that conditioning to one stimulus may be prevented by previous conditioning to another stimulus.

MENTAL IMAGE VERSUS PHYSICAL STIMULUS

Mental images of stimuli can substitute for their physical counterparts in the conditioning process. Conditioned response was larger in case of those who actually saw the stimulus than who was asked to imagine. (Dadds et al. , 1997).

Applications:

The principles of classical conditioning can be used in the following areas of animal and human behaviour:

1) ***Developing good habits:*** Principles of classical conditioning can be used foe developing good habits in children such as respect for elders, punctuality etc.
2) ***Breaking bad habits and elimination of conditioned fear:*** All learning is acquired in the social environment. Acquired learning may be deconditioned by using the principles of classical conditioning. Principles of classical conditioning can be used to decondition anxiety and fear in maladjusted children.
3) ***Training if the animals:*** Animal trainers have been using the principle of classical conditioning since long time without being much aware of the underlying mechanisms.
4) ***Use in psychotherapy:*** the principles of classical conditioning are used to remove the emotional fears in mental patients.
5) ***Developing positive attitudes:*** The principles of classical conditioning can be used for developing favorable attitudes towards learning, teachers and schools.

6) Classical Conditioning and the Immune System: Research also seems to indicate that it may be possible to alter the immune system through classical conditioning (Ader et al., 1993; Husband et al., 1993). Classical conditioning can exert powerful effects on the immune system, a discovery that may offer tremendous hope to people whose heath is compromised because of depressed immune systems, for example, persons who are HIV positive or have AIDS.

7) Conditioned Emotional Response (CER): Emotional response that has become classically conditioned to occur to learned stimuli. The learning of phobias is a ery good example of conditioned emotional response. Classic experiment with " Little Albert" and the white rat was a demonstration of learning a phobia (Watson & Rayner, 1920).

Criticism :

The principles of classical conditioning has severely been criticized by many researchers on some important grounds. These are a follows:

1) ***Conditioning principle is unable to describe and explain the multi-response learning situations***. This is supported by a series of experimental works of Bazren (1939,1940,1949).

2) Conditioning procedure is mechanical in nature.

3) ***Conditioning is a reflexive phenomenon.***

4) ***Classical conditioning does not recognize significance of non-reflexive behaviours and their consequences***.

OPERANT (INSTRUMENTAL) CONDITIONING

OPERANT (INSTRUMENTAL) CONDITIONING

B.F.Skinner (1938) talks of a different type of conditioning principle which is a modified procedure of Pavlovian classical conditioning procedure. Building up on Thorndike's work, Skinner began to publish a series of papers around 1930s exploring such voluntary responses which he calls **'operants'.** According to Skinner, the operants are those responses which are emitted, i.e. elicited spontaneously without any immediately identifiable stimuli. The essence of the theory is that the strenghth of response (i.e. frequency, rate, probability of occurrence) increases as a result of being followed by a reinforcer.

This type of learning is known as Operant conditioning. *Operant means that when a response operates on the environment, it may have the consequences that can affect the likelihood that the response will occur again and again. Thus, operants are those responses or behaviours that are voluntarily emitted by the learner to operate on the environment.* Based on the findings of his experiments, Skinner concluded that "behaviour is shaped and maintained by its consequences. It is operated by the organism and maintained by its results". The occurrence of such behaviour was named operant behaviour and the process of learning, that plays a part in learning such behaviour, was termed by him as operant conditioning.

Operant conditioning refers to a kind of learning process where a response is made more probable or more frequent by reinforcement. It helps in the learning of operant behaviour, the behaviour that is not necessarily associated with a known stimulus.

Instrumental conditioning is called instrumental because, the key feature of this form of learning is that some action (some behaviour) of the learner is instrumental in bringing about a change in the environment that makes the action more or less likely to occur again in the future.

Instrumental conditioning is also known as operant conditioning. This term was coined by B.F. Skinner to indicate that when a response operates on the environment, it may have consequences that can affect the likelihood that the response will occur again.

Experiment on Operant Conditioning

In the 1930s, B.F. Skinner began his influential experiments on what he termed operant conditioning. Skinner invented the Skinner box, or, as it is often called, the ***operant chamber***. An operant chamber is a simple box with a device at one end that can be worked by the animal in the box. For rats, cats and monkeys, the device is a lever; for pigeons the device is a small panel, called a 'key', which can be pecked. The lever and key are really switches that activate, when positive reinforcement is being used, a food-delivary or water-delivary.

The first step in operant conditioning of a hungry rat is to get it to eat the food pallets when they are delivered by the experimenter, who operates the pallet-delivery mechanism from a push-button switch outside the operant chamber. This first step is necessary if the food reinforcement is to be effective later, when the rat will deliver the food pellets to itself by pressing a lever.

Next, the experimenter stops releasing the pellets, and the rat is left alone in the box. After an initial period of inactivity, the rat, being hungry, begins to explore the box and presses the lever accidentally. A pallet of food is released; that is, reinforcement is contingent upon pressing the lever. After a while it presses the lever again, and aging a pallet is released. ***Usually after the fourth or fifth press, the rat begins to press the lever more rapidly, and operant behaviour is in full swing.***

Principles in Operant Conditioning:

Several operations are involved in the process of operant conditioning. Some important operations are:

1) ***Shaping***
2) ***Extinction***
3) ***Spontaneous recovery***
4) ***Stimulus generalization***
5) ***Stimulus discrimination***

1) Shaping: In operant conditioning, there is freedom on the part of the learner to emit responses. This makes it possible for the experimenter to shape behaviour through appropriate use of reinforcement. The ***basic process in shaping is successive approximation*** to the desired behaviour. Thus, the learner comes to approximate the final response through a series of successive steps and, therefore, the technique is known as successive approximation.

The principle of shaping is general one which applies to the instrumental learning of humans as well as lower animals. **Wolf et al. (19 4)** has made a repory of shaping the behaviour of a seriously disturbed child which may be cited as an example of shaping human behaviour by applying successive approximation technique through instrumental learning procedure.

Chaining: Shaping helps organisms acquire or construct new and more complex forms of behaviour from simpler behaviour. What about even more complex sequence of behaviour? These behaviour can be cultivated by means of a procedure called chaining-*a procedure that establishes a sequence of responses, which lead to a reward following the final response in the chain.* Shaping and chaining obviously have important implications for human behaviour. For example, when working with a beginning student, a skilled instructor may use shaping techniques to establish basic skills by praising simple accomplishment. As the training progresses, however, the student may receive praise only when he or she successfully completes an entire sequence or chain of actions.

2) Extinction: Just as in classical conditioning in operant conditioning procedure also it is possible to extinguish the conditioned response (CR) by withholding reinforcement. If positive reinforcement no longer follows that response, the tendency for it to occur will decrease; responses which do not pay off tend not to be made. The procedure of not reinforcing a particular response is known as extinction.

3) Spontaneous recovery: The phenomenon of spontaneous recovery has almost similar characteristics in Pavlovian and Operant conditioning. It refers to the fact that if an organism is removed from the situation for a while after extinction and then returned and again presented with stimulus, his performance will be better than would be predicted from his performance at the end of preceding extinction.

4) Stimulus generalization: In instrumental conditioning, stimulus generalization occurs. The response in instrumental conditioning is made in a particular stimulus situation-in an operant chamber with a certain type of light, for example. If the stimulus situation is changed, the response still occurs but less readily than it did in the original stimulus situation. Furthermore, the tendency to respond depends upon the degree of similarity between the original training situation and the changed one.

5) Stimulus discrimination: Like classical conditioning, in instrumental conditioning the discrimination was described as the process of learning to make one response to one stimulus and another response-or no response-to another stimulus. In instrumental conditioning experiment, discrimination is achieved simply by reinforcing a particular response to one stimulus and not reinforcing-which amounts to extinguishing- the same response to other stimulus.

Important concept of Operant conditioning

Reinforcement: *Reinforcement is any stimulus or event, that when following a response, increases the probability that the response will occur again.* Reinforcement is defined as follows:

1) The occurrence of a particular behaviour.

2) is followed by an immediate consequence.

3) that results in the strengthening of the behaviour.

A behaviour that is strengthened through the process of reinforcement is called an operant behaviour. The consequence that strengthens an operant behaviour is called a reinforcer.

Types of Reinforcement:

The events or items that can be used to reinforce behaviour are not all alike. Depending upon this criteria reinforcement can be divided into two types-

Primary Reinforcer

- Any reinforcer that is naturally reinforcing by meeting a basic biological need.
- Such as food (hunger drive), liquid (thirst drive) or touch (pleasure drive).

Secondary/ Conditioned Reinforcer

- Any reinforcer that becomes reinforcing after being paired with a primary reinforcer
- Such as praise, tokens, money etc.

Reinforcement can also differ in the way they are used:

Positive Reinforcement

The reinforcement of a response by the addition or experiencing of a pleasurable stimulus.

Stimuli that strengthen responses that precede them.

Negative Reinforcement

The reinforcement of a response by the removal, escape from, or avoidance of an unpleasant stimulus.

Stimuli that strengthen responses that permit the organism to avoid or escape from their presence

ESCAPE BEHAIOUR AND AVOIDANCE BEHAIOUR

Escape learning is an example of instrumental conditioning based on negative reinforcement. ***In escape behaviour,*** the occurance of the behaiour results in the termination of an aversie stimulus that was already present when the behaviour occured. That is, the person escapes from the aersie stimulus by engaging in a particular behaiour, and that behaiour is strengthened.

In avoidance behaviour, the occurance of the behaviour prevents an aversie stimulus from occurin. That is the person aoids the aversive stimulus by engaging in a particular behaviour, and that behaviour is strengthened.

Schedules of Reinforcement

The procedure of giving reinforcement is called conditioning which may be given on regular or intermittent schedule. The important schedules of reinforcement in developing and shaping individual's behaviour are as follows:

Continuous schedule

- It is an arrangement of providing reinforcement after every correct response.

Partial or intermittent schedule

- It is an arrangement when sometimes we provide reinforcement and sometimes we withhold the reinforcement.

Partial schedule of reinforcement has been further classified into the various categories:

1) Interval schedule: It is an arrangement of giving reinforcement after an interval. It can also be divided into two types:

Fixed interval schedule	• Here, the reinforcement is presented after a certain interval of time.
Variable interval schedule	• In variable interval schedule the interval is randomly varied after some given time value.

2) Ratio schedule: in this schedule, the performance of the learner is important as for example the learner responds correctly 2 questions and he receives a chocolate. It can also be divided into two types:

Fixed ratio schedule

- Here, the response must occur a certain number of times before reinforcement occurs. Here, the ratio refers to the number of unreinforced and reinforced responses.

Variable ratio schedule

- In this arrangement, the number of responses required for a reinforcement varies around some average ratio.

Punishment: In contrast to reinforcement, punishment refers to procedures that weaken or decrease the rate of behaviour. There are two types of punishment:

Positive Punishment

- In positive punishment, behaviours are followed by aversive stimulus events termed punisher. In such instances, we learn not to perform these actions because aversive consequences-punishers-will follow.

Negative Punishment

- In negative punishment the rate of a behaviour is weakened or decreased because the behaviour is linked to the loss of potential reinforcements (Catania, 1992; Millenson & Leslie, 1979).

When does punishment work?

The effectiveness of punishment depends upon a number of factors.

1)**Mild punishment to guide behaviour may be most effective in the long run.**

2) The more consistently punishment is administered, even if it is mild, the more effective it will be, if it is effective at all.

3) People and animals adopt to punishment, and this may weaken its effectiveness.

4***) Punishment, even when mild, can be quite effective if it is used to suppress one behaviour.***

Reinforcement and Punishment: An overview

Procedure	Stimulus events	Effects	Behavioural Outcomes
Positive reinforcement	Application of a desirable stimulus (e.g., food, praise)	Strengthens responses that precede occurrence of stimulus	Organisms learn to perform responses that produce positive reinforcers
Negative reinforcement	Application of an undesirable (aversive) stimulus (e.g., heat, cold, harsh criticism)	Strengthens responses that permit escape from or avoidance of stimulus	Organisms learn to perform responses that permit them to avoid or escape from negative reinforces.
Positive punishment	Application of undesirable (aversive) stimulus	Weakens responses that precede occurrence of stimulus	Organisms learn to suppress responses that lead to unpleasant consequences
Negative punishment	Loss or postponement of a desirable stimulus	Weakens responses that lead to loss or postponement of stimulus	Organisms learn to suppress responses that lead to loss or postponement of desired stimulus

Difference between Negative Reinforcement and Punishment

Negative Reinforcement

It is the ending of the event that is contingent on the response in negative reinforcement.

Responses followed by negative reinforcement tend to become more likely.

Punishment

It is the onset of the event that is contingent on the response in punishment.

Responses followed by punishment tend no to be repeated.

Cognitive perspective of Operant Conditioning

Studies of learned helplessness and the presence of a genetically inherited impairment in the ability to experience pleasure, contrast effects, and memory of reward events support the conclusion that cognitive factors play an important role in operant conditioning. ***Many psychologists believe that no account of operant conditioning can be complete without attention to cognitive factors (Colwill, 1993). Several types of evidence support this conclusion.***

• Perhaps the most dramatic evidence is the existence of a phenomenon known as ***learned helplessness***: it seems to result from situations in which nothing a person does yields reinforcers or provides escape from aversive events. Researches have begun to speculate that genetic factors may also play a role in learned helplessness. One such factor that has gained recent attention is a genetically inherited impairment in the ability to experience pleasure termed ***hypohedonia*** (Meehl, 1975). Apparently, the positive feelings that usually accompany successful performance are not experienced by people with hypohedonia. In other words, these individuals' correct responses may not feel very different from incorrect ones.

• Another important evidence is ***contrast effect***. Some evidence suggests that our behaviour is influenced not only by the level of rewards we receive but by our evaluation of rewards relative to our experiences with previous rewards. Studies have shown that shifts in the amount of reward we receive can dramatically influence performance, a temporary behaviour shift termed the contrast effect (***Crespi, 1942; Flaherty & Largen, 1975; Shanab & Spencer, 1978***). The existence of contrast effects indicates that level of reward alone cannot always express our behaviour and that experience with a previous level of reward and consequent expectancies can dramatically affect our performances.

Finally evidences suggest that cognitive processes play an active and important role in operant learning.

Application of Operant Conditioning:

Operant or instrumental conditioning principle is of greatest value in socializing a child, i.e., shaping the child's behaviour into our social norms and values. This facts has been pointed out by Skinner in his famous book ' Science and Human Behaviour'.

1. ***The principle of operant conditioning may be successfully applied in behaviour modification***.
2. ***Principles of operant conditioning have been applied in interventions aimed at solving socially significant issues*** in our communities, such as crime, health care issues, consumer affairs and safety promotion (Geller,1995,199 ; Green et al., 1987; Topf, 1999).

3. ***Often instrumental or operant conditioning is also used deliberately to shape our desired behaviour.***

Critical aspects of Operant conditioning

Some of the weaknesses of this theory are:

1) In instrumental conditioning, ***the logical learning or other higher learning processes can not be explained in terms of operant conditioning.***

3) ***Chomsky criticized the generality of application of the concepts and principles*** derived from controlled experimental studies on animals to the social learning situations.

4***) Skinner has completely ignored the innate endowment that is the hereditary factor*** which is very important in learning.

5***) It mechanizes the mental processes*** and treats the organism like a machine.

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Thank You.....