

Lesson:-18

LEARNING

Dear students, in today's lesson we will try to understand the process of learning in an individual. Learning is an extremely important area from the viewpoint of understanding human behaviour. In this context, we are not talking about the formal and structured types of learning that are expected to take place in classroom situations only. As we have mentioned earlier, the way an individual learns, what he learns are all important determinants of his behaviour. In this lesson on learning we will thus try to understand the following:

- Basic nature of learning
- Theories of learning
- Application of learning principles in organizational context.

A DEFINITION OF LEARNING

According to Stephen Robbins, learning may be defined as ***any relatively permanent change in behavior that occurs as a result of experience.*** Our definition is concerned with behavior. As Behaviour is collection of related activities, so change in behaviour results in to change in activities which are responsible for the concerned change behaviour.

The present definition of learning has several components that deserve clarification.

1. Learning involves change.

Change may be good or bad from an organizational point of view. People can learn unfavorable behaviors to hold prejudices or to restrict their output, for example-as well as favorable behaviors.

2. The change must be relatively permanent.

Temporary changes may be only reflexive and fail to represent any learning. Therefore, the Requirement that learning must be relatively permanent rules out behavioral changes caused by fatigue Or temporary adaptations.

3. Learning involves change in behaviour.

Learning takes place when there is a change in actions. we must depend on observation to see how much learning has occurred. For example if a word processing operator who key boarded 70 words a minute before taking a new training course can now key board 85 words in a minute, we can infer that learning has occurred.

We can say that a person has learned whenever changes in behavior of that person take place. In other words, we can say that changes in behavior indicate that learning has taken place. Similarly, no change in behavior indicates no learning has taken place. It must however be remembered that in certain types of learning, there are some periods of time that follow the learning during which there is no indication of apparent changes. This does not necessarily mean that no learning has taken place. These periods of no apparent change in behaviour is called the 'incubation period', where the assimilation and internalization of learning take place.

But in a general way we may say that in the process of learning, people behave in a changed way as a result of learning. Thus we infer that learning has taken place if an individual behaves, reacts, responds as a result of experience in a manner different from the way he formerly behaved.

THEORIES OF LEARNING

In order to explain the complex topic like human learning , various researchers have approached the problem from various perspectives. This has given rise to different theories of learning. We will review some of the most important theories of learning which are:

1. Classical Conditioning,
2. Operant Conditioning, And
3. Social Learning,

Traditional view: Classical Conditioning

To understand contemporary thinking of learning, we first need to be aware of its historical roots. Classical conditioning is a simple form of learning in which conditioned response is linked with an unconditioned stimulus.

What do you do when you hear a bell ring?

A teacher told this story on himself. When most teachers hear a bell one of the first things they do is walk out into the hallway to be a monitor just to keep a watchful eye on the students. Right? Well this guy had acquired such a habit that when he was at home and the doorbell rang he'd walk into a nearby hallway and "monitor" his family. For him it was simply such a strong habit that he'd produce the right behavior (going into the hall to monitor) at the wrong place (his own home).

In this section we will look at Classical Conditioning, perhaps the oldest model of change that is there. It has several interesting applications to the classroom, ones you may not have thought about. Let's look at the components of this model.

COMPONENTS OF CLASSICAL CONDITIONING

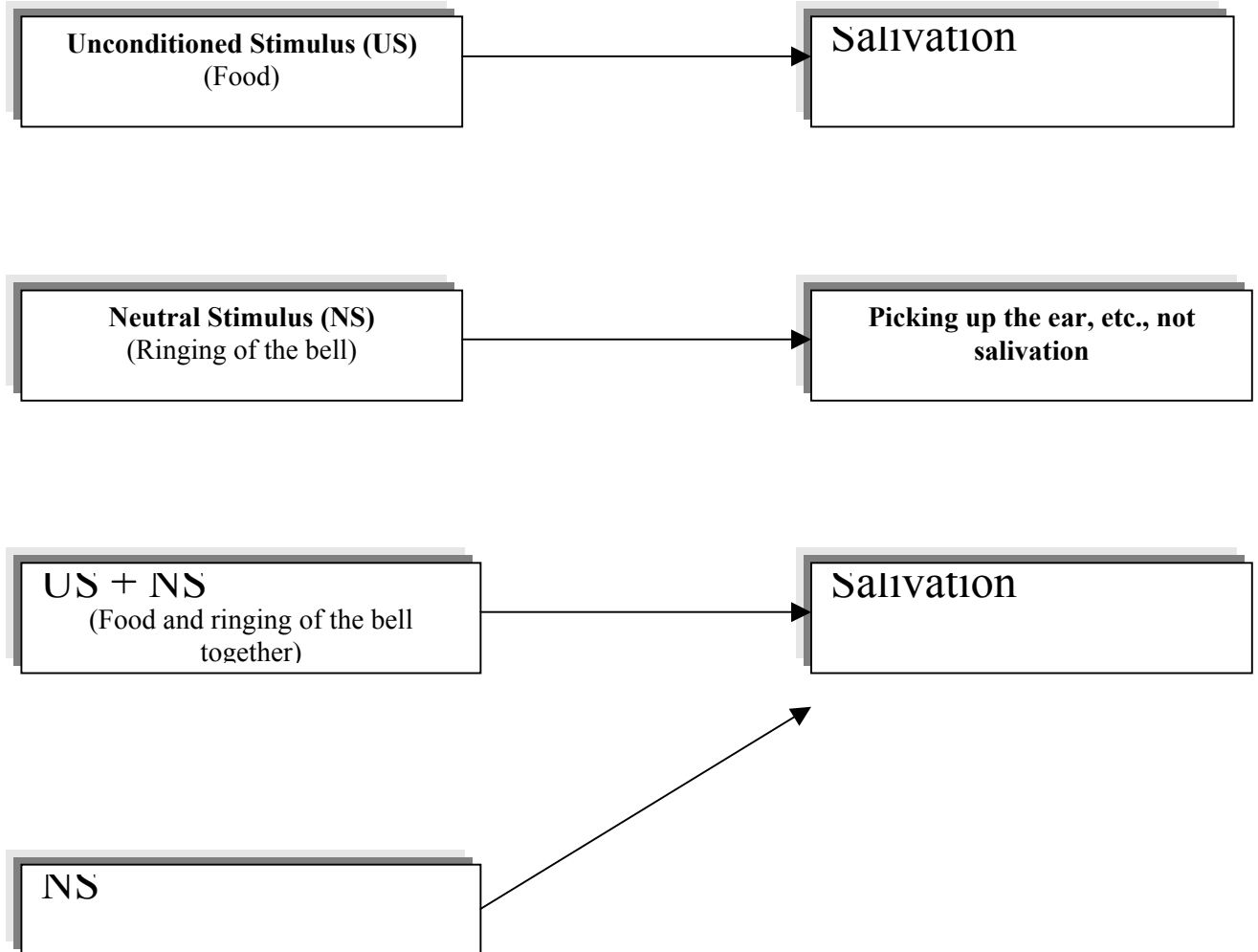
A Russian physiologist, Ivan Pavlov, conducted this experiment. A simple surgical procedure allowed Pavlov to measure accurately the amount of saliva secreted by a dog.

When Pavlov presented the dog with a piece of meat, the dog exhibited a noticeable increase in salivation.

When Pavlov withheld the presentation of meat and merely rang a bell, the dog did not salivate.

Then Pavlov proceeded to link the meat and the ringing of the bell. After repeatedly hearing the bell before getting the food, the dog began to salivate as soon as the bell rang.

Table 1 : Classical Conditioning



The easiest place to start is with a little example. Consider a hungry dog who sees a bowl of food. Something like this might happen:

Food ---> Salivation

The dog is hungry, the dog sees the food, the dog salivates. This is a natural sequence of events, an unconscious, uncontrolled, and unlearned relationship. See the food, then salivate.

Now, because we are humans who have an insatiable curiosity, we experiment. When we present the food to the hungry dog (and before the dog salivates), we ring a bell. Thus,

- Bell
- with
- Food ---> Salivation

We repeat this action (food and bell given simultaneously) at several meals. Every time the dog sees the food, the dog also hears the bell. Ding-dong, Alpo.

Now, because we are humans who like to play tricks on our pets, we do another experiment. We ring the bell (Ding-dong), but we don't show any food. What does the dog do? Right,

Bell ---> Salivate

The bell elicits the same response the sight of the food gets. Over repeated trials, the dog has learned to associate the bell with the food and now the bell has the power to produce the same response as the food. (And, of course, after you've tricked your dog into drooling and acting even more stupidly than usual, you must give it a special treat.)

This is the essence of Classical Conditioning. It really is that simple. You start with two things that are already connected with each other (food and salivation). Then you add a third thing (bell) for several trials. Eventually, this third thing may become so strongly associated that it has the power to produce the old behavior.

Now, where do we get the term, "Conditioning" from all this? Let me draw up the diagrams with the official terminology.

- Food -----> Salivation
- Unconditioned Stimulus ---> Unconditioned Response

"Unconditioned" simply means that the stimulus and the response are naturally connected. They just came that way, hard wired together like a horse and carriage and love and marriage as the song goes. "Unconditioned" means that this connection was already present before we got there and started messing around with the dog or the child or the spouse.

"Stimulus" simply means the thing that starts it while "response" means the thing that ends it. A stimulus elicits and a response is elicited. (This is circular reasoning, true, but hang in there.) Another diagram,

- Conditioning Stimulus
- Bell
- with
- Food -----> Salivation
- Unconditioned Stimulus-----> Unconditioned Response

We already know that "Unconditioned" means unlearned, untaught, preexisting, already-present-before-we-got-there. "Conditioning" just means the opposite. It means that we are trying to associate, connect, bond, link something new with the old relationship. And we want this new thing to elicit (rather than be elicited) so it will be a stimulus and not a response. Finally, after many trials we hope for,

- Bell -----> Salivation
- Conditioned Stimulus ---> Conditioned Response

Let's review these concepts.

1. Unconditioned Stimulus: a thing that can already elicit a response.
2. Unconditioned Response: a thing that is already elicited by a stimulus.
3. Unconditioned Relationship: an existing stimulus-response connection.
4. Conditioning Stimulus: a new stimulus we deliver the same time we give the old stimulus.
5. Conditioned Relationship: the new stimulus-response relationship we created by associating a new stimulus with an old response.

There are two key parts. First, we start with an existing relationship, Unconditioned Stimulus ---> Unconditioned Response. Second, we pair a new thing (Conditioning Stimulus) with the existing relationship, until the new thing has the power to elicit the old response.

A LITTLE HISTORY AND A COMPARISON

The example we used here is from the first studies on classical conditioning as described by Ivan Pavlov, the famous Russian physiologist. Pavlov discovered these important relationships around the turn of the century in his work with dogs (really). He created the first learning theory which precedes the learning theory most teachers know quite well, reinforcement theory. We will look at reinforcement theory in a separate chapter, but for now I do want to make a point.

The point is this: Classical conditioning says nothing about rewards and punishments which are key terms in reinforcement theory. Consider our basic example,

- Conditioning Stimulus
- BELL
- with
- Food -----> Salivation
- Unconditioned Stimulus ---> Unconditioned Response

There is nothing in here about rewards or punishments, no terminology like that, not even an implication like that. Classical conditioning is built on creating relationships by association over trials. Some people confuse Classical Conditioning with Reinforcement Theory. To keep them separated just look for the presence of rewards and punishments.

EVERYDAY CLASSICAL CONDITIONING

This type of influence is extremely common. If you have pets and you feed them with canned food, what happens when you hit the can opener? Sure, the animals come running even if you are opening a can of green beans. They have associated the sound of the opener with their food.

Classical conditioning works with people, too. Go to K-Mart and watch what happens when the blue light turns on. Cost conscious shoppers will make a beeline to that table because they associate a good sale with the blue light. (And, the research proves that people are more likely to buy the sale item under the blue light even if the item isn't a good value.)

And classical conditioning works with advertising. For example, many beer ads prominently feature attractive young women wearing bikinis. The young women (Unconditioned Stimulus) naturally elicit a favorable, mildly aroused feeling (Unconditioned Response) in most men. The beer is simply associated with this effect. The same thing applies with the jingles and music that accompany many advertisements.

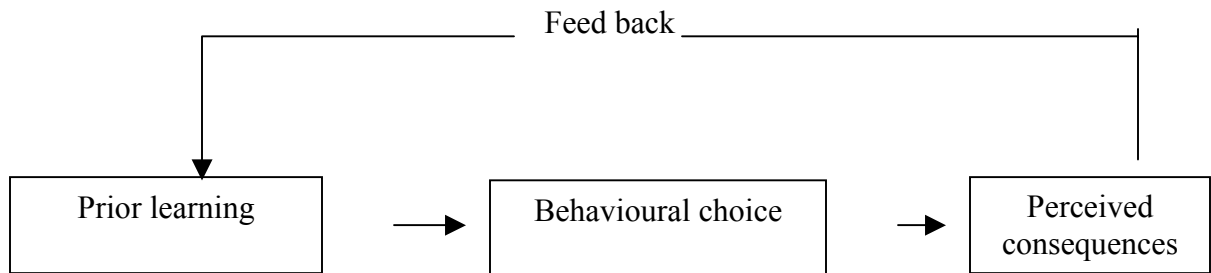
Perhaps the strongest application of classical conditioning involves emotion. Common experience and careful research both confirm that human emotion conditions very rapidly and easily. Particularly when the emotion is intensely felt or negative in direction, it will condition quickly.

For example, I have heard from a person who, when was in college was robbed at gun point by a young man who gave him The Choice ("Your money or your life.") It was an unexpected and frightening experience. This event occurred just about dusk and for a long time thereafter, the guy often experienced moments of dread in the late afternoons particularly when he was just walking around the city alone. Even though he was quite safe, the lengthening shadows of the day were so strongly associated with the fear he experienced in the robbery, that he could not but help feel the emotion all over.

Clearly, classical conditioning is a pervasive form of influence in our world. This is true because it is a natural feature of all humans and it is relatively simple and easy to accomplish.

The Contemporary view: learning as a cognitive process

Although it is not tied to single theory or model, contemporary learning theory generally views learning as a cognitive process; that is, it assumes people are conscious, active participants in how they learn.



(Learning as a cognitive process)

First, in the cognitive view, people draw on their experiences and use past learning as a basis for present behavior. These experiences represent presumed knowledge or cognitions. For example, an employee faced with a choice of job assignments will use previous experiences in deciding which one to accept.

Second, people make choices about their behavior.

Third, people recognize the consequences of their choices. Thus, when the employee finds the job assignment rewarding and fulfilling, she will recognize that the choice was a good one and will understand why. Finally, people evaluate those consequences and add them to prior learning, which affects future choices.

Therefore, several perspectives on learning take a cognitive view. Foremost is the operant conditioning or reinforcement theory, which we will be studying in our next lesson. So, before knowing about operant conditioning, let's put learning in an organizational context.

Learning in organizations:

Most people associate learning with formal education and with school in particular. While this association is quite logical, we should also note the pervasive extent to which learning also occurs in organizations. From a simple orientation perspective, for example, newcomers to an organizations learn when to come to work, how to dress, whom to ask for assistance, how to apply for annual leave, when to expect a paycheck, how to file an insurance claim, and so forth. From performance perspective, employees learn how to do their jobs more effectively, what is expected of them in the way of performance outcomes, and what it takes to get rewarded. From a social perspective, employees learn how to get along with colleagues, which behaviors are acceptable and unacceptable, the norms of the group, and so on. From a political perspective, employees learn how to get along with their bosses, whom to avoid, whom to trust, and so forth. And from a career perspective, employees learn how to get ahead, how to get promotions, which job assignments to seek and which to avoid, and the like. Clearly, then, much of organizational life and the behavior of individuals within organizations are influenced by learning and learning processes.

Operant conditioning

We will now review the operant conditioning theory of learning today that was offered by B. F. Skinner. This is also known as Reinforcement theory.

Overview: In simplest form this theory suggests that behavior is a function of its consequences. Thus behavior that results in pleasant consequences is more likely to be repeated, and behavior that results in unpleasant consequences is less likely to be repeated.

This theory further suggests that in any given situation, people will explore a variety of possible behaviors. Future behavioral choices are affected by the consequences of earlier behaviors. Cognitions, as already studied by us in our previous lesson, also play an important role. Thus, rather than assuming a mechanical stimulus-response linkage suggested by the traditional classical view of learning, contemporary theorists believe that people consciously explore different behaviors and systematically choose those that result in the most desirable outcomes.

Suppose a new employee wants to learn the best way to get along with his boss. At first, the employee is very friendly and informal, but the boss responds by acting aloof and, at times, annoyed. Because the boss does not react positively, the employee is unlikely to continue this behavior. In fact, the employee starts acting more formal and professional and finds the boss much more receptive to this posture. In all likelihood, the employee will continue this new set of behaviors because they result in positive consequences.

Analysis of B.F. Skinner Theory of Operant Conditioning: The theory of B.F. Skinner is based upon the idea that learning is a function of change in overt behavior. Changes in behavior are the result of an individual's response to events (stimuli) that occur in the environment. A response produces a consequence such as defining a word, hitting a ball, or solving a math problem. When a particular Stimulus-Response (S-R) pattern is reinforced (rewarded), the individual is conditioned to respond. The distinctive characteristic of operant conditioning relative to previous forms of behaviorism (e.g., Thorndike, Hull) is that the organism can emit responses instead of only eliciting response due to an external stimulus.

People learn to behave to get something they want or to avoid something they don't want. This theory was inferred Ivan Pavlov 's experiment of Dog–bell. As got dog used to get meat after bell ringing which is positive reinforcements to that of the bell ringing. The tendency to repeat such behavior is influenced by the reinforcement or lack of reinforcement brought about by the consequences of the behavior. Reinforcement, therefore, strengthens a behavior and increases the likelihood that it will be repeated. Reinforcement is the key element in Skinner's S-R theory. A reinforcer is anything that strengthens the desired response. It could be verbal praise, a good grade or a feeling of increased accomplishment or satisfaction. The theory also covers negative reinforcers -- any stimulus that results in the increased frequency of a response when it is withdrawn (different from aversive stimuli -- punishment -- which result in reduced responses). A great deal of attention was given to schedules of reinforcement (e.g. interval versus ratio) and their effects on establishing and maintaining behavior.

What Pavlov did for classical conditioning, the Harvard psychologist B F Skinner did for operant conditioning" Building on earlier work in the field, Skinner's research extensively expanded our knowledge of operant conditioning. People will most likely to keep in desired behaviors if they are positively reinforced for doing so. Examples of positive reinforcements in the context of organizations include incentives, bonus-policies for performers etc. Rewards and Recognition are *most* effective if they immediately follow the desired response. In adding together, behavior that is not rewarded or is punished is less likely to be repeated.

One of the distinctive aspects of Skinner's theory is that it attempted to provide behavioral explanations for a broad range of cognitive phenomena. For example, Skinner explained drive (motivation) in terms of deprivation and reinforcement schedules. Skinner (1957) tried to account for verbal learning and language within the operant conditioning paradigm, although this effort was strongly rejected by linguists and psycholinguists. Skinner (1971) deals with the issue of free will and social control.

Reinforcement strengthens desirable behaviour by either bestowing positive consequences or withholding negative consequences and increases the likelihood that the behaviour will be repeated.

Principles:

1. Behavior that is positively reinforced will recur; intermittent reinforcement is particularly effective
2. Information should be presented in small amounts so that responses can be reinforced ("shaping")
3. Reinforcements will generalize across similar stimuli ("stimulus generalization") producing secondary conditioning.

Scope/Application:

Operant conditioning has been widely applied in clinical settings (i.e., behavior modification) as well as teaching (i.e., classroom management) and instructional development (e.g., programmed instruction).

Types of Reinforcement

Managers can use various kinds of reinforcement to affect employee behavior. There are four basic forms of Reinforcement:

- Positive reinforcement
- Avoidance
- Extinction
- Punishment

1) Positive reinforcement

Positive reinforcement is a reward or other desirable consequence that follows behavior. A compliment from the boss after completing a difficult job and a salary increase following a period of high performance are examples of positive reinforcement..

The general affect of providing positive reinforcement after behavior is to maintain or increase the frequency of that behavior. Managers might define “desirable” employee behavior as hard work, punctuality, loyalty and commitment to the organization. When employees exhibit these behaviors, the

managers may reward them with pay increases, promotions and the like. Positive reinforcement is mainly intended to ensure the same type of behavior in future.

2) Avoidance

Also known as negative reinforcement. It is another means of increasing the frequency of desirable behavior. Rather than receiving a reward following a desirable behavior, the person is given the opportunity to avoid an unpleasant consequence. For example, an employee's boss may habitually criticize individuals who dress casually. To avoid criticism, the employee may formally dress to suit the supervisor's taste. The employee is engaging in desirable behavior to avoid an unpleasant or aversive, consequence.

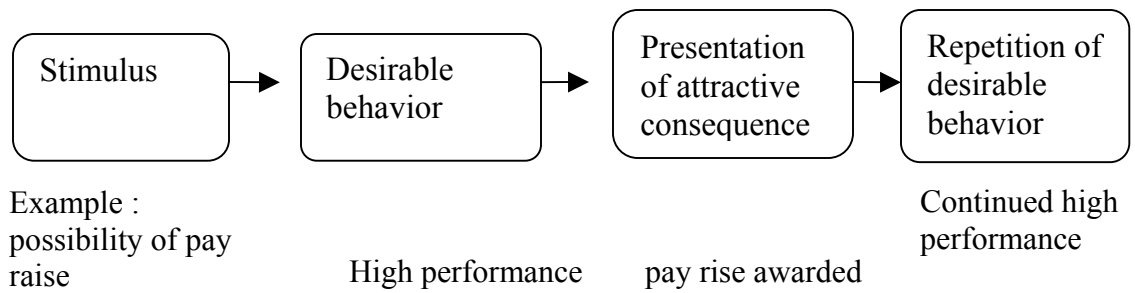
3) Extinction

Positive reinforcement and avoidance increase the frequency of desirable behavior, extinction tends to decrease the frequency of undesirable behavior. For example, a manager with small staff may encourage frequent visit from subordinates as a way to keep in touch with what is going on. Positive reinforcement might include cordial conversation, attention to subordinates concerns and encouragement to come in again soon. As the staff grow, however, the manager may find that such unstructured conversations now make it difficult to get her own job done. Then the manager might brush off casual conversation and talk to the point of "business" conversations. Withdrawing the rewards for casual chatting probably will extinguish behavior of subordinates to enter into managers cabin again and again.

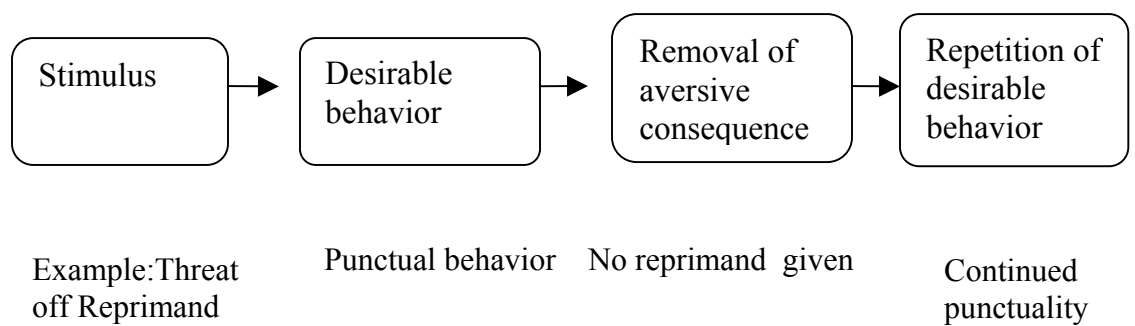
4) Punishment

Punishment, like extinction, also tends to decrease the frequency of undesirable behaviors. In the work place, undesirable behavior might include being late, arguing with superiors and not following the rules framed by the organization. Examples of punishment are verbal or written reprimands, pay cuts, loss of privileges, lay offs, and termination.

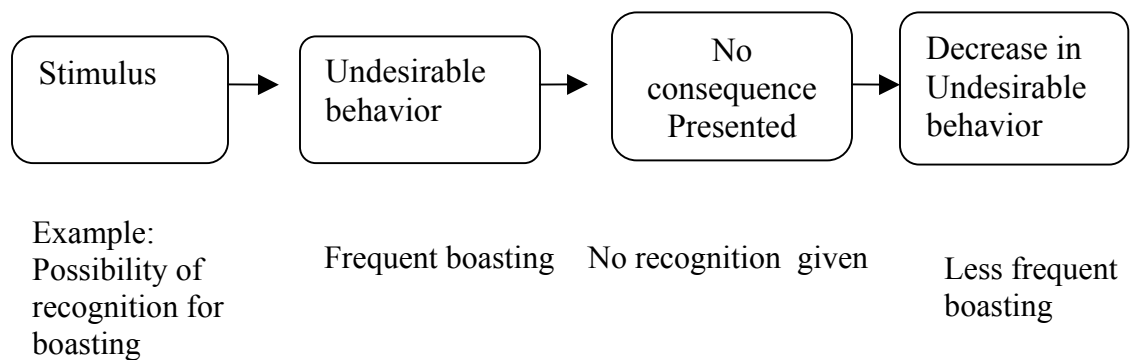
Positive Reinforcement :



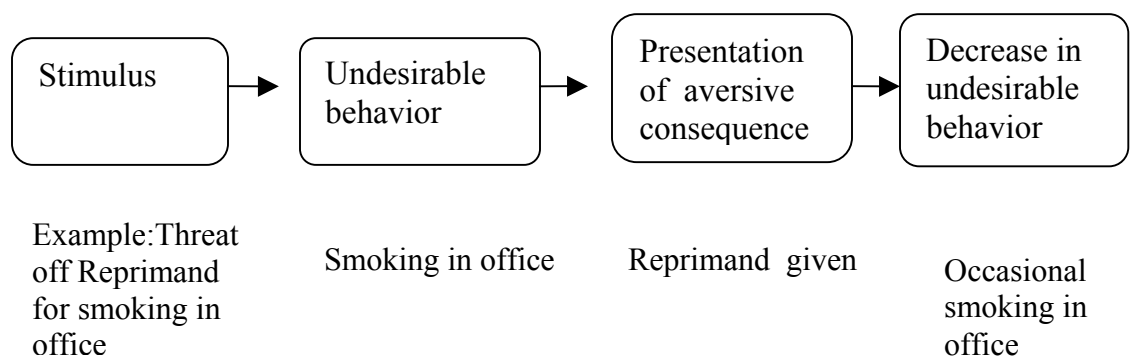
Avoidance :



Extinction :



Punishment :



Schedules of Reinforcement

When and how the reinforcements should be applied for effective learning? At times reinforcement takes place on a continuous basis. Every time a little child does her homework neatly, the teacher gives her a 'gold star'. But usually most reinforcements that are given in work and everyday life are partial in nature in the sense that sometimes it is given after the desired behaviour and sometimes not. It is however found that behaviour that is based on partial reinforcement schedule is much more persistent and is likely to continue even when reinforcement is removed. This is true despite of the fact that on partial reinforcement schedules less amount of reinforcement is offered. Continuous reinforcement schedules are found to lead to early satiation and behaviour tends to weaken rapidly after the reinforcers are withheld. The little child might gradually lose the excitement in getting 'gold star' and might not be too bothered to do her homework neatly anymore. In contrast, the variable schedules of reinforcements are found to be more effective because perhaps of the element of surprise being present. To summarize, we may conclude that there are two broad types of reinforcement schedules:

- ***Continuous reinforcement*** when a desired behaviour is reinforced each and every time it is demonstrated
- ***Intermittent reinforcement*** when a desired behaviour is reinforced often enough to make the behaviour worth repeating but not every time it is demonstrated. Four possible types of intermittent reinforcement includes the following:

- **Fixed Ratio** when a fixed number of responses are required to be emitted for obtaining the reinforcement. This is found to be offered as piece-rate payment system
- **Variable Ratio** when a varying or random number of responses must be emitted before reinforcement occurs. This is found to be implemented when the employees are given certain percentage on their performance as the incentive as 'commission'.
- **Fixed interval** when the reinforcements are spaced at uniform intervals of time. This is found in monthly or weekly payment system.
- **Variable interval** when reinforcements are distributed in time so that these are unpredictable.

To sum up relying on any given schedule for all rewards is difficult or impractical. Instead, the manager should use the schedule best suited to the kind of reinforcement being used and try to link outcomes with behaviors according to the needs of the organization and its employees

