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# UNIT 1 BEHAVIOURAL THEORIES

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## 1.0 INTRODUCTION

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This block will help you understand the concept of 'learning'. The behavioural theories have differently tried to explain the process and concept of 'learning'. Predominantly, all the theories of behavioural approach explain that learning implies to a fairly permanent change in behaviour or performance. It is needless to say that behavioural theories were propounded by the Psychologists who had a belief that learning and behaviour are inter related and these psychologists were the followers of School of Behaviourism. They opined that learning cannot be directly observed but can be inferred from observable behaviour. From change in a person's performance in any task at one time point to another time point, it can be inferred that some learning has taken place during the passage of time. If this change in performance occurs on more than one occasion then there is more strength in the inference that learning has taken place. The question of how these changes occur and what mechanisms are involved is described by behavioural theorists. There are major behavioural theories that explain the learning process. In this unit, the theories of classical conditioning, operant conditioning, observational learning and cognitive learning will be presented under the umbrella of behavioural theories.

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## 1.1 OBJECTIVES

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The present Unit will help you to:

- understand the basic concepts of behavioural theories;
- comprehend the theory of Classical conditioning;
- comprehend the theory of Operant conditioning; and
- comprehend the theory of Social learning and cognitive theories.

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## 1.2 BEHAVIOURAL THEORIES

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Behaviourism was introduced in 1913 by John B Watson, an American psychologist and is characterized by the study of behaviour i.e. the observable activities of the people. He believed that in contrast to observable behaviour, inner experiences are not observable and therefore unreliable. Those who supported this school were called behaviourists. As per behaviourism, any behaviour can be learned, relearned and unlearned and environment has significant role in shaping individual's behaviour.

Behavioural school of thought led to development of behavioural therapy which is widely used now-a-days. Behaviour therapy is based on the principles of learning theories. Learning is defined as a relatively permanent change in behaviour resulting from repeated practice or experience. The basic assumption of learning theory is that both the environment and behaviour interact to produce a learned change. The concept of learning (and its relation to behaviour) has been explained by different theories of learning (Theory of Classical Conditioning, Theory of Instrumental Conditioning, Social Learning theory and Cognitive Based theory) which has been dealt one by one.

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## 1.3 THEORY OF CLASSICAL CONDITIONING

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This is also called *respondent conditioning*. The theory explains that the process of learning takes place when a response becomes associated with a new stimulus and this process of a response to a new stimulus is known as conditioning. The idea of classical conditioning developed after Ivan Pavlov's experiment. Pavlov was a physiologist who was interested in observing the process of digestion in dogs. In the course of his physiological investigations, he noticed that dogs salivate even before any food was given to them. It would salivate when it looked at food, or the feeding bucket or even the footsteps of the person who fed it. These observations led to the study of what is now called classical or respondent conditioning. In his experiment, Pavlov paired sound of the bell with presentation of food shortly afterwards for few times. After some trials, the dog salivated at the sound of bell even when it was not followed by food. The amount of saliva increased with training i.e. with more number of trials. In other words, he *conditioned* the dog to salivate in response to sound of bell. In this method of classical conditioning, the stimulus which naturally evokes a reflex-like response is called the *unconditioned stimulus* (UCS) (food). The reflex-like response produced by the unconditioned stimulus is called the *unconditioned response* (UCR) (salivation). The stimulus which is neutral (bell) in the beginning and

begins to evoke a response (salivation) after being paired with unconditioned stimulus a number of times, is called the *conditioned stimulus* (CS). The response (salivation) produced by the originally neutral conditioned stimulus (bell) (food) is called the *conditioned response* (CR). The acquisition of CR is gradual and its frequency and strength increases with number of trials. This basic procedure can be used with a variety of conditioned stimuli e.g. buzzers, lights, geometric figures etc. The relationship between the conditioned stimulus and the unconditioned stimulus can also be varied. For example, the CS can be given before the UCS to elicit a CR. This is called *forward or delayed conditioning*. The CS can be given after the presentation of UCS and this is called backward conditioning. Simultaneous conditioning occurs when CS and UCS are given together. CS can be presented and removed before the UCS, so only a 'memory trace' of the CS remains. This is called *trace conditioning*. *Extinction* occurs when CS is presented alone without the US for a number of trials.

### 1.3.1 Higher Order Conditioning

As mentioned earlier also that an association formed in between response and stimulus is called conditioning. The First order conditioning occurs when CS produces CR. After first order conditioning has occurred and the CS and UCS are strongly associated such that CS produces the CR easily. Now, if a new stimulus can be introduced just before a CS is presented, then the CR is associated even with the new stimulus, although to a lesser degree. For example, a black square is presented using delayed conditioning with a bell, and then the dog salivates even to the sight of the black square. This is called second or *higher order conditioning*.

### 1.3.2 Generalization and Discrimination

The process of conditioning can further lead to generalisation and discrimination of response or behaviour to various stimuli. In generalization, the CR transfers spontaneously to stimuli which is somewhat similar to the original conditioned stimulus. For example, the dog will salivate to the sound of bell of any pitch or a buzzer. The discrimination is the ability to make response to one stimulus and a different or no response to another stimulus. However, when dogs are continuously presented with bells of pitch that differs widely from the original, then the CR weakens.

Watson and other behaviourists realized that human behaviour could also be changed by conditioning. Watson demonstrated this on little Albert who was an 11 month old baby. While Albert was playing with a rat (*unconditional response*), a loud noise was introduced (*conditional stimulus*). Eventually Albert developed fear (*conditioned response*) of rats. He also demonstrated that the boy could learn to develop a fear to similar objects like rabbits and eventually to anything that is furry. This was because of generalization whereby conditioned response (fear) occurred with stimuli (rabbit and furry objects) that were somewhat similar to the original conditioned stimulus (rat). Watson's work helped explain the development of phobias in humans.

### 1.3.3 Systematic Desensitisation

If fear, as in the example of little Albert, could be deliberately induced, then it can also be removed as was demonstrated by Dr Watson and his colleagues by a technique called *systematic desensitization*. They demonstrated that the

learned behaviour (fear) could be unlearned through classical conditioning. This could be done by a process of weakening the association between the CS and UCS. The strength of the stimulus to be conditioned is presented with decreasing or increasing intensity while engaging in a task that is relaxing and inhibiting to fearful responses.

**Self Assessment Questions 1**

**Fill in the blanks:**

- 1) Behaviourism was introduced by .....
- 2) The behaviourists believed that learning cannot be directly observed but .....
- 3) When the CR is spontaneously transferred to stimuli that is somewhat similar to the original conditioned stimulus, the process is known as .....
- 4) Systematic Desensitization is a process of .....

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## 1.4 THEORY OF OPERANT CONDITIONING

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In early twentieth century, B. F. Skinner, an American psychologist put forth his views on human behaviour. He is associated with instrumental conditioning. He described how the principles of conditioning might be applied in learning behaviour.

The *instrumental conditioning* is called instrumental as behaviour of learner is instrumental in bringing about a change in the environment that makes the behaviour likely to occur again and again. Instrumental conditioning is also called *operant conditioning*. The term *operant* refers to how an organism operates on the environment, and hence, operant conditioning comes from how we respond to what is presented to us in our environment. It can be thought of as learning due to the natural consequences of our actions. In operant conditioning, the likelihood of a response is increased or decreased by virtue of its consequences. Therefore, in respondent behaviour, the past experience is important and it depends on the reinforcement by the environment.

The term reinforce means to strengthen, and is used in psychology to refer to any stimulus which strengthens or increases the probability of a specific response.

Reinforcement is the process by which events in the environment increase the probability of the behaviour that preceded it. A behaviour that is associated with a positive consequence or desirable outcome in the past will increase the chances of the behaviour to occur again. This is called *positive reinforcement*. Learning can also take place if an undesirable consequence is avoided because of an action taken. This is called *negative reinforcement*. A negative reinforcer (for example electric shock) is a stimulus whose termination is contingent on a response and increases the chances of response occurring again. These are generally noxious or painful stimuli. It involves removal of an aversive consequence. For example, if a student does not prepare for exams and gets

fail marks (painful) and understands that by preparing for the next exam he can avoid getting fail marks, then we can say the he is negatively reinforced to study.

There are primary reinforcers and conditioned or secondary reinforcers. Primary reinforcers are those which bring about a reaction that is instinctive. For example, food is a primary reinforcer when we are hungry.

A secondary reinforcer is a stimulus to which we have learnt to respond because of past learning by association of the stimulus with a primary reinforcer. An example is money, as it is associated with primary reinforcers like it is used to get food when we are hungry.

*Punishment* is a consequence that suppresses behaviour. Punishment is a process by which behaviour frequency is decreased because of aversive consequences. A punisher is a stimulus whose onset is contingent on a response and decreases the chances that the response will occur again. Therefore, a basic differentiation between negative reinforcement and punishment should be made. While both are often noxious stimuli, it is ending of the stimulus which is contingent on response in negative reinforcement while it is onset of event which is contingent on the response in punishment. The punishment decreases the probability of behaviour while negative reinforcement increases the probability of behaviour.

### 1.4.1 Types of Reinforcement

There are various schedules of reinforcing behaviour and can be continuous or intermittent.

**Continuous Schedule:** When reinforcement is presented every time the behaviour occurs, it is called continuous reinforcement. A continuous schedule is observed to be best for initial teaching of behaviour. This is because behaviour is reinforced each time it occurs. Once the behaviour is established, it is preferable to decrease the ratio of reinforcers to responses or desired behaviour. This is because there might be a satiation to the reinforcers in the long run and that may eventually lead to decreased motivation to perform the desired behaviour.

When an undesirable behaviour needs to be changed and when punishment is used as a method of choice, it is best to apply continuous reinforcement. This is because inconsistent punishment, might lead to confusion or resentment towards the person applying the method. A problem with this schedule is that we are not always present when behaviour occurs or may not be able to apply the punishment.

**Intermittent schedules:** Four types of intermittent schedules of reinforcements have been used to change behaviour in experimental conditions. Each schedule is observed to have different impact on the behaviour. However, all the four schedules are known to result in stronger responses and changes in behaviour.

A *fixed ratio schedule* refers to applying reinforcement after a specific number of behaviours or responses.

A *fixed interval schedule* refers to applying reinforcement after a specific and fixed amount of time.

*Variable ratio schedule* refers to applying reinforcement after a variable number of responses. It has been found to work best under many circumstances. One of the best examples for this is gambling behaviour.

*Variable interval schedule* refers to applying reinforcement after a variable amount of time. The variable schedules are more powerful and result in more consistent behaviours because of element of uncertainty and unexpectedness which lead to maintaining a steady and consistent behaviour pattern.

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## 1.5 SOCIAL LEARNING THEORY

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This theory was proposed by Albert Bandura which states that people also learn through social context. According to this view, people behave in certain ways because of the environmental influences and psychological processes. This theory essentially encompasses the concepts of classical conditioning and operant conditioning. He put forth the view that learning also takes place by observation, imitation and modelling of other's behaviour and cognition plays a significant role in learning behaviour. The theory states that for effective learning through modelling, observation and imitation of behaviour to occur, attention, retention, reproduction and motivation is essential.

Observational learning takes place when a person observes the rewards and punishments that another person receives for his/her behaviour and behaves accordingly. This is called *vicarious reinforcement*. He also put forth the concept of self-efficacy, that is, the belief that one can successfully execute behaviour necessary to control desired outcome. Self-efficacy is found to be related to motivation, self-esteem, interpersonal relationships, health behaviour, addictions, etc.

### Self Assessment Questions 2

State whether the statements are true or false:

- 1) Observational learning takes place when a person observes the rewards and punishments that another person receives for his/her behaviour. ( )
- 2) Variable ratio schedule refers to applying reinforcement after a specific number of responses. ( )
- 3) Punishment is a consequence that reinforces behaviour. ( )
- 4) The *instrumental conditioning* is also called operant conditioning. ( )

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## 1.6 COGNITION BASED THEORIES

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The cognition based theories propose that our cognition is responsible for shaping our behaviour. Cognition refers to the processing of information that is received through senses. Cognitive learning is a change in the way information is processed as a result of experience a person had.

Aaron Beck and Albert Ellis are two well-known cognitive theorists who have contributed to the understanding of several psychological disorders, like depression.

Aaron Beck proposed *cognitive therapy* and emphasized the role of *automatic thoughts*, ideas that are so deep-rooted that the individual is often not aware of them, which come to mind spontaneously and cannot be neglected. For example, if one student fails in a test he might think “how irresponsible am I”, or he or she may think “I am so dumb”, etc. These automatic thoughts are usually of a self-defeating nature and are followed by the experience of negative emotions.

Albert Ellis gave *rational emotive therapy* and proposed A-B-C model which suggests that how one feels is determined by the way one thinks about the events in his or her life.

A refers to the *activating event*

B to the *beliefs*

C is the *consequences*

According to him, irrational beliefs which are not realistic based or unrealistic and inflated views about self and the world are the major cause of several psychological disorders. Conforming rigidly to these irrational beliefs using ‘should/must/ought’ makes one feel miserable and results in emotional disturbances.

David Barlow gave a model that explains the impact of a combination of physiological, cognitive and behavioural factors on the development of anxiety disorders. For example, a panic attack may be triggered when a person who hyperventilates (physiological factor) after climbing up stairs, misinterprets (cognitive factor) the physiological signs as an indication of an impending heart attack and forms associations between some stimuli and the experience of panic, consequently avoiding that situation (behavioural factor).

### 1.6.1 Cognitive Therapies

According to the cognitive and cognitive-behavioural therapies, our way of thinking is determined by the way it is felt to us. Based on this principle is the technique of cognitive restructuring in which the therapist helps the client change the way he thinks about himself, others and the future. The therapist does this by encouraging the client to identify maladaptive attitudes and irrational beliefs, challenge them and replace them with ideas that can be checked in real life.

Panic control therapy is a form of cognitive-behavioural therapy that is used to treat panic disorder which is a type of anxiety disorder in which the person experiences recurrent and unexpected panic attacks. It combines cognitive restructuring, exposing the client to the bodily sensations associated with panic attacks and breathing retraining. Here, the client is taught to identify how faulty cognitive judgments are contributing to the experience of anxiety, examine their reactions and change them with appropriate breathing techniques. With the help of this therapy they are also encouraged to realise and identify those places, persons and behaviours which make them feel safe.

Acceptance and commitment therapy is also a type of cognitive therapy in which the client is encouraged to acknowledge and accept all the distressing thoughts, feelings and behaviours and thereby gain a sense of control that helps them in their commitment to overcome them.

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## 1.7 EVALUATION OF BEHAVIOURAL AND COGNITIVELY BASED PERSPECTIVE

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The cognitive - behavioural perspective is credited for its simple approach that emphasises on the use of objective/empirical procedures. According to the humanists, the behavioural perspective limits the scope of psychology because it does not take into account the active choices that individuals make (free will) in dealing with the environment. The psychoanalysts have criticised the behaviourists for ignoring the fascinating unconscious influences on behaviour. However, the cognitive theories acknowledge that thought processes need to be studied and that implicit ideas about the self do influence behaviours.

Behavioural and cognitive theories have a wide application and are useful in explaining and treating a variety of disorders including anxiety disorders, mood disorders, eating disorders, sexual dysfunctions, etc.

### Self Assessment Questions 3

1) What is Panic control therapy?

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2) What are the applications of behavioural and cognitive theories?

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3) What is the meaning of 'A', 'B', and 'C' in the ABC model?

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## 1.8 LET US SUM UP

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It can be summed from the above discussion that the school of behaviourism emphasized on the process of learning, The emphasis is on conditioned responses as the elements or the building blocks of behaviour. The emphasis is on learned behaviour. It also emphasized the study of animal behaviour as a means of studying human behaviour. Cognitive theory gives importance to the role of thoughts and beliefs in human behaviour and aims at changing negative irrational beliefs into rational beliefs.

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## 1.9 ANSWERS TO SELF ASSESSMENT QUESTIONS

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### Self Assessment Questions 1

1) John B Watson

- 2) Learning cannot be directly observed but can be inferred from observable behaviour.
- 3) Generalization.
- 4) Unlearning a learnt behavior with the help of Classical Conditioning.

### Self Assessment Questions 2

- 1) True
- 2) False
- 3) False
- 4) True

### Self Assessment Questions 3

- 1) Panic control therapy is a form of cognitive-behavioural therapy that is used to treat panic disorder.
- 2) Behavioural and cognitive theories are useful in explaining and treating a variety of disorders including anxiety disorders, mood disorders, eating disorders, sexual dysfunctions, etc.
- 3) Albert Ellis gave *rational emotive therapy* and proposed A-B-C model which suggests that how one feels is determined by the way one thinks about the events in his or her life. In the model, 'A' refers to the activating event; 'B' to the beliefs and 'C' is the consequences.

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## 1.10 UNIT END QUESTIONS

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- 1) What is classical conditioning?
- 2) What is respondent or instrumental conditioning?
- 3) Explain how classical conditioning can occur in behavioural disturbances such as phobias.
- 4) What is stimulus generalization?
- 5) What is positive and negative reinforcement?
- 6) How is negative reinforcement different from punishment?
- 7) Explain social learning theory.
- 8) Write briefly about the concept of Beck and Ellis.

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## 1.11 REFERENCES

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