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**16.0 OBJECTIVES**

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In this unit we shall:

- Define learning concepts underlying learning theories of language acquisition;
- Discuss the learning theories of Pavlov and Skinner;
- Delineate the process and principles of classical conditioning;
- Describe process and principles of operant conditioning;
- Classical conditioning v/s Operant conditioning

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**16.1. INTRODUCTION**

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“Language learning is doubtless the greatest intellectual feat anyone of us is ever required to perform”

- Leonhard Bloomfield.

Language is a cognition that truly makes us human. Whereas other species do communicate with an innate ability to produce a limited number of meaningful vocalizations (e.g. bonobos), or even with partially learned systems (e.g. bird chirps), there is no other species known to date that can express infinite ideas (sentences) with a limited set of symbols (speech sounds and words). In the present unit we will discuss two important learning theories of language acquisition. First, we will focus our attention to Pavlov's theory of learning and then we will turn to explain the important features of Skinner theory of language learning.

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## **16.2. WHAT IS LANGUAGE ACQUISITION**

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According to the Routledge Linguistics Encyclopaedia, "language acquisition is the term commonly used to describe the process whereby children become speakers of the native language (first language acquisition) or children or adult become speakers of a second language (second language acquisition).

Various theories and approaches have been emerged over the years to study and analyse the process of language acquisition. Three main schools of thought that provide theoretical paradigms in guiding the course of language acquisition are

- (1) Behaviourist theory
- (2) Innatist theory
- (3) Cognitivist theory

### **16.2.1. Behavioural Approaches To Language Acquisition**

Behaviourism is the earliest language learning theory which is propounded by J.B. Watson (1878-1957) in 1913. This theory is supported and believed by some behaviourists like Skinner, Pavlov and Thorndike. It is one of the basic theories advanced to describe how language is acquired, learnt and taught. It works on the premise that language is a behavior and, consequently, is learned like any other behaviour.

The major principle of behaviorist theory is the analysis of human behavior in observable stimulus-response interaction as the association between them. It is a matter of conditioning by means of imitation, practice, reinforcement, and habituation, which constitute the paces of language acquisition. In language teaching area, behaviorism establishes the basic background of exercises, either oral or written in viewing language as stimulus and response. In addition, it gives a great deal of insight into the recognition of the use of controlled observation to discover the laws of behavior.

The behaviourist psychologists developed their theories while carrying out a series of experiments on animals. They observed that animals could be taught to perform various tasks by encouraging habit-forming.

Researchers rewarded desirable behaviour. This was known as **positive reinforcement**. Undesirable behaviour was punished or simply not rewarded - **negative reinforcement**.

Children develop a natural affinity to learn the language of their social surroundings whose importance both over language learning and teaching must never be underestimated. In this respect behaviorist theory stresses the fact that "human and animal learning is a process of habit formation.

### **16.2.2. Main Concept of Behaviourism**

The major principle of the behaviorist theory rests on the analyses of human behavior in observable stimulus-response interaction and the association between them. We learn new behaviour through classical or operant conditioning. Behaviorists believe we learn by associating events, known as **classical conditioning**. We also learn through rewards and punishments, a process known as **operant conditioning**.

### **16.2.3. Behaviourism: Main Principles**

- Main protagonists: Ivan Pavlov, John Watson, Edward Thorndike, B.F. Skinner.
- Learning happens when a correct response is demonstrated following the presentation of a specific environmental stimulus.
- Learning is changed behaviour.
- **Conditioning**: Learning is seen as a process of developing connections between a stimulus and a response. This process is called conditioning.
- **Habit formation**: An individual responds to a stimulus by behaving in a particular way. If the behaviour is reinforced (i.e. rewards or punishment) then the likelihood of that behaviour occurring on a subsequent occasion will be increased or decreased. As the behaviour is reinforced, habits are formed.
- **Importance of environment**: Learning is a result of environmental rather than genetic factors. The child is born as a clean slate and the environment writes its messages on this clean slate.

#### **Some common approaches to behaviourism are:**

- 1 conditioned reflexes by Pavlov
2. operant conditioning by Skinner.

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## **16.3 PAVLOV (1849-1936): LEARNING THEORY OF LANGUAGE ACQUISITION**

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The father of conditioning theory, Ivan Pavlov, a Russian scientist made the discovery that led to the real beginning of behaviourism. He discovered Classical Conditioning: unconditioned stimulus causes unconditioned response. In other words, learning is the involuntary

association of stimulus and response. Pavlov viewed individual differences in personality as the result of learning and different environmental experiences.

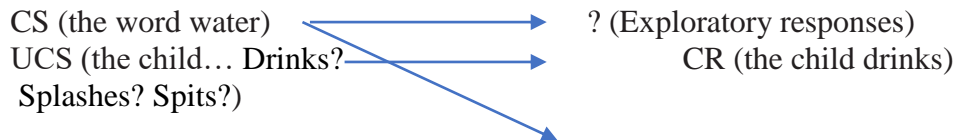
Pavlov studied reflexes, which are the automatic behaviours that are caused by a stimulus from the environment. Some reflexes, such as nodding the head in response to positive correspondence and shaking the head in response to disagreement. This automatic behaviour can be manipulated. This is called conditioning.

Pavlov assumed that stimulus and response work together. The example of behaviorism based on Pavlov was children developed to learn the language of their social surroundings naturally whose importance both over language learning and teaching must never be underestimated.

### 16.3.1 Process Of Classical Conditioning

Language Learning is the involuntary association of stimulus and response. In order to examine the process of classical conditioning in a systematic manner, Pavlov first performed a simple operation on his dog. Pavlov stated that a conditioned stimulus can serve as the basis for further conditioning, which is demonstrated by Pavlov. It was maintained by the behaviourist that language as well is a sort of behaviour that can be acquired in ideal social conditions. According to them language is essentially the product of the society.

For example, an Adult utters “water” whenever the child sees water. Here the Unconditioned stimulus(UCS) is “water”. The child in response may spits water or drinks or splashes it. This is called the Unconditioned response(UCR). The adult repeats the same word ‘water’ whenever the child sees water. Here the conditioned stimulus is the word ‘water’(CS). After repeated practice, a child learns the word water and drinks. This is called conditioned response(CR). So afterwards whenever the child feels thirsty and needs water, he speaks the word ‘water’ instead of any other word.



Pavlov further stated that a conditioned stimulus can serve as the basis for further conditioning, which is demonstrated by Pavlov.

Pavlov's experiment which indicates that stimulus response work together. According to this category, the babies obtain native language habits via varied babblings which resemble the appropriate words repeated by a person or object near him. Since for his babblings and mutterings he is rewarded, this very reward reinforces further articulations of the same sort into grouping of syllables and words in a similar situation. In this way, he goes on emitting sounds, groups of sounds, and as he grows up he combines the sentences via generalisations

and analogy (as in \*goed for went, \*doed, for did, so on), which in some complicated cases, condition him to commit errors by articulating in permissible structures in speech. By the age of five or six, or babblings and mutterings grow into socialized speech but little by little they are internalized as implicit speech, and thus many of their utterances become distinguishable from the adults. This, then, obviously, means that behaviorist theory is a theory of stimulus-response psychology.

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## 16.4 SKINNER (1904–1990): LEARNING THEORY OF PERSONALITY

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One of the earliest scientific explanations of language acquisition was provided by [Skinner](#) (1957). As one of the pioneers of [behaviorism](#), he accounted for language development by means of environmental influence. B.F. Skinner (1904-1990) claimed that language is just another form of behavior. It is a response to stimuli in the environment. And it is learned.

Skinner coined the term “Operant Conditioning,” meaning simply that a behavior resulting in positive consequences is likely to be repeated, while a behavior resulting in negative consequences is likely to be halted.

### 16.4.1. Skinner’s Process Of Operant Conditioning

According to Skinner, language is a conditioned behaviour - the stimulus response process. He views the process of language acquisition as a building process that results from interaction with the environment. The main principle of operant conditioning, as defined by Skinner is positive and negative reinforcement. Reinforcement is the process in which a behaviour is strengthened, and thus, more likely to happen again. Positive Reinforcement is making a behaviour stronger by following the behaviour with a pleasant stimulus. To understand the process of operant conditioning, Skinner first made an experiment with rat. For example, a rat presses a lever and receives food. Negative Reinforcement is making a behaviour stronger by taking away a negative stimulus. For example, a rat presses a lever and turns off the electric shock.

According to Skinner, learning in which a voluntary response is strengthened or weakened, depends on its positive or negative consequences. It works with voluntary muscles only, in contrast to Pavlov’s classical conditioning. In *Verbal Behavior*, Skinner described language as a behavior that, as such, is learned: “A child learns verbal behavior when utterances relatively lacking in pattern, and which are selectively reinforced, gradually take on forms that produce the appropriate consequences in a given verbal community”

Child goes through trial and error in other words that rise and fails to use correct language until it succeeds with reinforcement and shaping provided by the parents gestures like smiles attention and approval which

are presented to the child. Skinner in verbal behaviour differentiated between two types of verbal responses that a child makes –

1. verbal behaviour that is reinforced by the child receiving something she wants
2. verbal behaviour caused by imitating others.

Skinner argued that children learn language based on behaviorist reinforcement principles by associating words with meanings. Correct utterances are positively reinforced when the child realizes the communicative value of words and phrases.

For example, when the child says ‘milk’ and the mother will smile and will give him some as a result, the child will find this outcome rewarding, enhancing the child's language development.

Skinner would say that a child learns language through positive reinforcement. His basic explanation for the development of speech was that parents tend to reward infant vocalisations (such as babbling) by giving the infant attention. This increases the frequency of vocalisation. He would suggest that the child will not progress from babbling to language unless the parent’s shape the child’s language behaviour.

After rewarding vocalisations for a while, parents become used to a child’s babbling and pay less attention to it. This motivates the infant to vary the babbling. Sometimes, by accident, the child produces more recognisable speech sounds e.g. if an infant suddenly said ‘Dadadada’, parents might respond positively. The response reinforces the child’s production of this type of speech sound. Other sounds that are less like actual speech tend to be ignored. However, parents non response to repetitions of ‘Dadadada’, motivates the child to modify such sounds. This process continues, resulting in sentences of increasing complexity and grammatical correctness. In addition, the use of language is rewarded when a child asks for something and as a result, succeeds in getting it. Thus, Children learn language step by step - Imitation, Repetition, Memorization, controlled drilling and reinforcement. Reinforcement can either be positive or negative.

B.F.Skinner asserts that children start out as clean slates and language learning is a process of getting linguistic habits printed on these slates. Skinner viewed babies as empty vessels which language had to be put into. Skinner also viewed language acquisition as a cognitive behaviour.

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## **16.4 LET US SUM UP**

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Language Learning theory presents a model of language learning/ acquisition that emphasises observable behaviour, the relationship between stimuli and responses, and the impact of learning. The behaviourist position is that language learning is no more (or less) than a collection of learned behaviour patterns. Language, like other learned

behaviour, is acquired through classical and operant conditioning, observational learning, reinforcement, extinction, generalisation, and discrimination. The present unit discussed two important learning theories of language learning/ acquisition. First, we focused on Pavlov's theory of classical conditioning and then we explained Skinner theory of operant conditioning.

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## 16.5. KEY WORDS

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<b>Classical conditioning</b>	A form of learning in which stimuli initially incapable of eliciting certain responses acquire the ability to do so through repeated pairing with other stimuli that are able to elicit such responses.
<b>Conditioned response</b>	A response evoked by a conditioned stimulus.
<b>Conditioned stimulus</b>	A stimulus which acquires the capacity to evoke particular responses through repeated pairing with another stimulus capable of eliciting such reactions.
<b>Continuous reinforcement</b>	Condition under which a particular form of behaviour is followed by reinforcement on every occasion it is emitted.
<b>Extinction</b>	The process through which conditioned response is weakened and eventually eliminated.
<b>Operant conditioning</b>	A form of learning in which responses that yield positive consequences or lead to escape from negative outcomes are strengthened.
<b>Unconditioned response</b>	A response evoked by an unconditioned stimulus.
<b>Unconditioned stimulus</b>	A stimulus possessing the capacity to elicit reactions from the organisms in the absence of prior conditioning.

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## 16.6 BOOKS SUGGESTED

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1. C.S Hall, G. Lindzey and J.B. Campbell: *Theories of Personality*
2. B. F. Skinner, B.F.: *Verbal Behavior*
3. M. Tomasello: *Constructing a language: A usage-based theory of language acquisition.*
4. Routledge Linguistics Encyclopaedia edited by Kirsten Malmkjaer

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**16.7 CHECK YOUR PROGRESS**

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1) What is language acquisition?

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2) What are the main features of Behaviouristic theory of language acquisition?

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3) Discuss the process of classical conditioning.

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4) What are the salient features of Skinner's theory of operant conditioning? Discuss it.

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5) Discuss classical vs operant conditioning.

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**MCQ:**

- (1) Behaviourism is the earliest language learning theory which is propounded by  
 (a) **J.B. Watson** (b) Ivan Pavlov (c) B. F. Skinner  
 (d) Edward Thorndike
- (2) Undesirable behaviour was punished or simply not rewarded is called  
 (a) **negative reinforcement** (c) positive reinforcement  
 (b) classical conditioning (d) operant conditioning
- (3) Desirable behaviour was rewarded and encouraged is called  
 (a) **positive reinforcement** (b) negative reinforcement  
 (c) classical conditioning (d) operant conditioning
- (4) Behaviorists believe we learn by associating events, known as  
 (a) **classical conditioning** (c) negative reinforcement  
 (b) positive reinforcement (d) operant conditioning
- (5) We also learn through rewards and punishments, a process known as  
 (a) **operant conditioning** (c) negative reinforcement  
 (b) positive reinforcement (d) classical conditioning
- (6) Classical Conditioning was discovered by  
 (a) **Ivan Pavlov** (b) J.B. Watson (c) B. F. Skinner  
 (d) Edward Thorndike
- (7) In order to examine the process of classical conditioning, Pavlov first performed a simple operation on  
 (a) Dog (b) rat (c) cat (d) birds
- (8) According to \_\_\_\_\_, language is a conditioned behaviour  
 (a) **B. F. Skinner** (b) Ivan Pavlov (c) J.B. Watson  
 (d) Edward Thorndike
- (9) A response evoked by a conditioned stimulus is called  
 (a) **Conditioned response** (c) Conditioned stimulus  
 (b) Extinction (d) negative reinforcement
- (10) \_\_\_\_\_ asserts that children start out as clean slates and language learning is a process of getting linguistic habits printed on these slates.  
 (a) **B. F. Skinner** (b) J.B. Watson (c) Ivan Pavlov  
 (d) Edward Thorndike

[Answers: Correct option 'A']