

## 5

# PERCEPTION AND ATTENTION

### 5.1 Introduction

Suppose your best friend invites you to a birthday party. You are now standing in a room full of people. If I were to ask you what do you see in the room, you would probably answer-"I see a lot of people in the room". If now, I were to ask you "who are the people present in the room?" You would probably give me the names of people who you already know of. Though, there were many other people present in the room, you attended to only a few of them.

In other words, you have been very selective in perceiving the people around you in the room.

In real life, hundreds of stimuli fall on our sense organs but we attend only to a few. Thus, there is purpose in our attention. Our perception is selective and purposive in nature.

In this lesson, you will know more about perception and attention.

### 5.2 Objectives

After reading this lesson you will be able to:

- describe the factors in perceptual organization;
  - explain briefly perception of size, form, shape location and constancy;
  - give an example of illusion and explain its cause;
  - describe the role of motivation and learning in perception;
  - explain the nature of attention;
  - describe the factors that affect attention.
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### 5.3 Organisation in Perception

Let us try to find out the factors that help us to explain the perception of objects.

#### Factors in Perceptual Organization

##### *Figure and background*

The environment we live in is filled with objects standing against a background. For example, mountains stand out against the sky, roses bloom against the green leaves. If the figure and the background are not well defined, then our perception tends to shift, as shown in the figure. If I ask you to closely look at the figure and tell me what it looks like, you would come up with different answers. Someone might say- "it looks like a vase" or "it looks like two faces facing each other" or you might say that- "at times it looks like a vase and at times it looks like two faces".

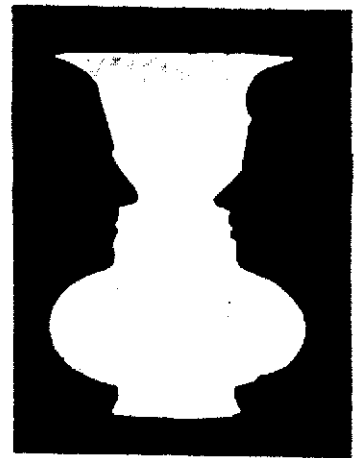












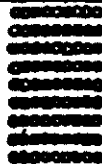
Fig. 5.1 Figure and Ground

This is because, our perception is shifting. Sometimes, the white portion, which looks like the vase, becomes the figure and sometimes the black portion, which looks like the two faces, becomes the figure. Thus, a figure has the following characteristics:

- (a) It stands in front of the ground.
- (b) It has a definite form.
- (c) It attracts attention.
- (d) The size of the figure is *generally* smaller than the ground.

##### **Proximity.**

Objects, which are close, tend to be seen as a group as compared to those, which are not together. For example looking at the teaset or jugs and glasses

<p><b>Figure-Ground:</b> The ground is always seen as farther than the figure</p>		
<p><b>Proximity:</b> Objects that are physically close together are grouped together</p>		
<p><b>Continuity:</b> Objects that continue a pattern are grouped together</p>	<p>When you see this</p>  <p>do you see this?</p>  <p>Plus this?</p>  <p>Or this?</p> 	<p>b. Proximity &amp; similarity.</p>
<p><b>Closure:</b> The tendency to see a finished unit</p>		
<p><b>Similarity:</b> Similar objects are grouped together</p>		<p>c. Closure.</p>

### Similarity

In the presence of many stimuli, the ones that are alike tend to be grouped together. At home in the kitchen saucers/plate are seen together.

### Direction

When the stimuli fall along a straight line or a curve they will tend to be grouped together because of continuity.

### Closure

There is always a tendency to complete the incomplete figures. We perceive them as wholes and smoothen the edges.

Therefore, while hearing a song without some words of a song on the radio/tape are erased, you can generally fill in the missing part.

### Past experience

A printed material without proper spacing, cannot be read unless one has the past experience of reading the same text. For example if you drive a vehicle and come across road signs. You know where to turn and where to stop.

*Did you know that*

*You probably learn to judge distances by moving about.*

*If you look at two unfamiliar objects that are at the same distance, the larger will usually appear closer.*

*You group objects together according to principles as proximity, similarity, directions or continuity, closure and past experience.*

### Intext Questions 5.1

Fill in the blanks with suitable words :

1. (i) Figure and \_\_\_\_\_ influence our perception.
- (ii) The \_\_\_\_\_ of the figure is smaller than the background.
- (iii) The \_\_\_\_\_ stands in front of the ground.
- (iv) If the figure and background are not well defined then our \_\_\_\_\_ will shift.

2 Match the following statements :

- |                |  |
|----------------|--|
| (a) Proximity  | (i) When stimuli fall along a straight line or curve |
| (b) Similarity | (ii) tendency to complete incomplete figures         |
| (c) Direction  | (iii) objects which are close together               |
| (d) Closure    | (iv) all stimuli that are alike                      |

### 5.4 Perceptual Constancies

Coal appears to be black whether we see it in sunlight or in the shade. Such constancy grows out of experience. There are various types of constancy, such as :

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**(i) Shape Constancy**

When we see a window from any angle, we will always perceive it as rectangular, even though at certain angles it does not look rectangular.

**(ii) Size constancy**

When we see an object at a distance, even though it is forming very small image on the eye, yet we see its actual size if the object is known to us. For example, if we see a train coming from a distance, though the engine may look like a toy, we will still see it in its actual size. Same is true of a man coming from a distance.

**(iii) Colour Constancy**

The example of coal has already been given in the beginning. The colour of an object will be perceived the same, irrespective of lighting or colour combinations.

**(iv) Location Constancy**

Major part of our world is stable for us because we perceive the objects as being the same when we last looked at them. We also look at many objects in a setting that remain essentially fixed. Thus, we take the stability of the world around us for granted. It also depends on our past experiences.

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**Intext Questions 5.2**

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State whether the following statements are true or false :

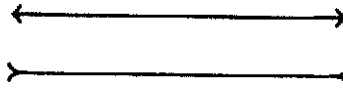
- (i) Coal appears black in sunlight.
  - (ii) A window will change its shape when seen from a different angle.
  - (iii) A train coming from far will look like a toy.
  - (iv) Colour of an object changes with light.
  - (v) constancy grows out of experience.
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**5.5 Errors of Perception (Illusion)**

Sometimes whatever we see is not always true. In other words, we cannot totally depend on our perception to give us a true picture of the stimulus. For example, in the dark we might mistake a coiled rope for a snake, especially if we are scared and frightened. Such wrong interpretation of a stimulus is called illusion. Thus, an illusion

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is a wrong perception. The famous example of an illusion is the Muller Lyer Illusion. Figure below is an example of the Muller Lyer Illusion.



In the above figure, we have two lines, which are of equal length. One is enclosed by the arrowheads and the other by featherheads. If you however look at the two straight lines, you will perceive the arrowhead line to be shorter than the featherhead line.

These illusions may be caused due to many factors such as :

- (a) The physical condition of the sense organs.
- (b) The sensitivity of the receptors.
- (c) The limitation of the receptors.
- (d) Past learning.
- (e) Attitude and mental set at the time of the stimulus.
- (f) Emotional state of the person.

The first three factors deal with the adequate functioning of the sense organs. Thus, false perception may be a result of certain defect in the concerned sense organs. For example, if we are hard of hearing, we might mistake the sound of an aeroplane to that of something else. The other three factors depend on the person concerned. For example, if a person is in a hurry to reach office, he will perceive the car in which he is travelling to be very slow even if it is at a high speed. This is because of his anxious state.

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### Intext Questions 5.3

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- (i) State whether the following statements are true or false :
  - a) Whatever we see is not always true.
  - b) We can totally depend upon our perception.
  - c) An illusion is a wrong perception.
  - d) In dark we might mistake a rope for a snake.
- (ii) Fill in the blanks with suitable words :

**Illusion may be caused due to many factors such as**

- a) \_\_\_\_\_ condition of the sense organ.
  - b) The sensitivity of the \_\_\_\_\_
-

- 
- c) The \_\_\_\_\_ of the receptors
  - d) \_\_\_\_\_ learning
  - e) \_\_\_\_\_ and mental set.
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### 5.6 Role of Motivation and Learning in Perception

Children are generally very interested in playing cricket. A child of seven years may also be very familiar with the terms used in playing cricket and he looks out for every opportunity to go out and see people playing cricket. Have you ever thought about that how a small child can say the key terms of cricket like spin bowling, square leg, silly point etc ? It is because they are motivated.

All our attention, perception and learning are affected by motivation. If we are not motivated we will not attend and not learn at all or learn very little.

Motivation gives the energy to take interest in a particular thing and to attend to things for example, if a child is interested in drawing, he/she watches how others do it and imitate. Hence, motivation plays a very important part in perception and learning. We will learn those things fast which are of interest to us. All our perception will be towards attending to things that interest us only.

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### Intext Questions 5.4

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Choose the correct alternative to answer the following questions :

- (i) Why does a student not learn ?
    - a) Student is too poor.
    - b) Teacher cannot teach.
    - c) School is far off.
    - d) Student is not motivated
  - (ii) If a student is not motivated, he will :
    - a) Study hard
    - b) Give his examinations happily
    - c) Change the school
    - d) Not attend and learn very little
  - (iii) If a child wants to draw, he will :
    - a) Play with the pencils.
    - b) Keep trying and will ultimately learn to draw.
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- c) Forget about drawing.
  - d) Tear off papers.
- (iv) We tend to perceive things if we :
- a) are not interested.
  - b) are motivated.
  - c) are told to look around.
  - d) are awake.

### 5.7 Nature of Attention

It often happens that though you pass through the same road and look at the things you do not pay attention to each detail. But when suddenly your shoe needs mending—you look for a cobbler and find him sitting in the corner of the same road. It is because attention is a selective process. In everyday life, we come across people who use their eyes, ears, nose and other sensory organs to understand the world around them.

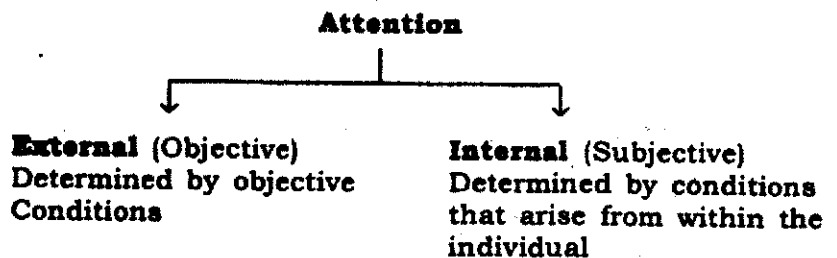
There are so many things around us. Do we see all of them ? No, we only see a few selected things. Attention is thus defined as the selection of a particular stimulus or a group of stimuli and ignoring the rest. Attention is affected by many things such as our interest, attitude, motivation, mental set, etc.

*Attention is the selection of a particular stimulus or a group of stimuli ignoring the rest.*

### 5.8. Factors Influencing Attention

Attention depends upon many factors. Basically, these factors can be categorized as external and internal factors.

External factors as the name suggests are related with the environment. In our environment, there are many stimuli but we do not attend to all of them at the same time. Certain stimuli are stronger than others. Internal factors depend on the person concerned.



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## **External Factors in Attention**

The following are the most important external factors in attention :

### **i) Intensity of the stimulus**

Attention is always attracted towards a louder sound than towards a weaker sound, a brighter colour than a lighter shade and a sharper pain in the body than a lighter sensation.

### **ii) Size of the Stimulus**

The bigger the size, it is mostly likely that you will get attracted to it. For example, you will see a bigger picture first than a smaller picture in a magazine, its because the size of picture catches your attention.

### **iii) Nature of Stimulus**

Attention also depends on whether the stimulus is visual, auditory, tactual, etc. Pictures of human beings and those of beautiful ladies attract more attention. Similarly, coloured pictures attract more attention than black and white pictures.

### **iv) Contrast of the Stimulus**

Two men of nearly the same height and weight standing together will not draw as much attention as, a tall man standing beside a short man or a fair man standing beside a dark man.

### **v) Movement of the Stimulus**

A moving stimulus will draw more attention than a static (non-moving) stimulus. For example, a movie will attract more attention than a still picture. This technique is used widely in advertisement, when shopkeepers/businessmen advertise their products through moving electric lights.

### **vi) Duration of the Stimulus**

The stimulus that has more duration attracts attention than a stimulus with lesser duration. In other words, the longer the time of the stimulus the greater will be impact on the people.

### **vii) Repetition of the Stimulus**

If the same stimulus is repeated more often, it will get noticed by people. For example, if the teacher repeats the important points in a class more students will listen and pay attention to it.

### **viii) Novelty of the Stimulus**

New things attract more attention than old ones. New coins, new pictures, new faces will always get more attention than old, used ones. This happens because people get bored seeing the same thing over and over again.

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## **Internal Factors of Attention**

### **i) Interest**

All of us will attend to those things that belong to our interest. For example, while reading a newspaper, a sportsman will be more interested in sports news than any other news. It is because his interest lies in sports. Similarly, a politician will pay more attention to the political news.

### **ii) Basic Drives**

In a human being there are certain basic needs which make him draw his attention. For example, if you are hungry, you will look for food everywhere and will pay attention to only food-related items. Similarly, if you are in danger, you will look for a safe place to hide.

### **iii) Emotions**

Emotions play a very important role in attention. If we are happy, we will find everything good and pleasant around us but if we are sad and unhappy even things that we like will no longer hold our attention.

### **iv) Mental Set**

This means our basic attitude towards things, people. During examination season our mental set is towards studying or anything which is related to studies. Thus, we will attend to only those things that help us in passing our examinations.

### **v) Aim**

Our immediate and ultimate goal influences our attention. For example, if our immediate aim is to pass in the examination, we will be interested in books, notes, etc. If our ultimate or long term goal in life is to become a doctor, then we will attend to things that will help us reach that goal.

### **vi) Temperament**

A person who is very religious by nature will attend to all religious matter first.

### **vii) Habit**

Habit is an activity that we develop over a period of time. If it is a habit to get up early in the morning and know about what is happening around us, we will immediately attend to the newspaper.

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## **Intext Questions 5.5**

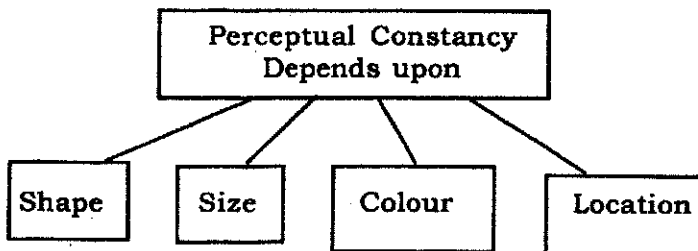
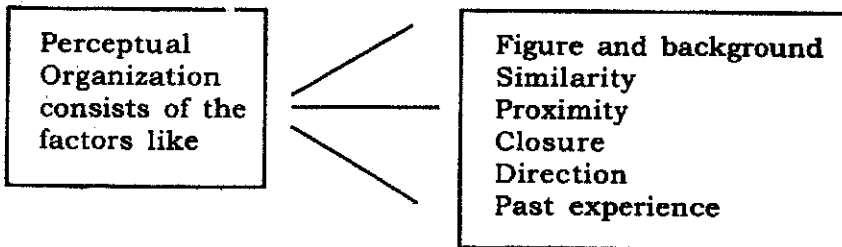
1. What is attention ?
    - a) It is a hereditary process
    - b) It is a selective process
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- c) It is a genetic process
  - d) It is an evolutionary process.
2. State whether the following statements are True or False :
- (i) Attention is affected by two categories of factors-External and Internal.
  - (ii) We get drawn towards objects that are non-moving and small in nature.
  - (iii) If we see a stimulus repeatedly we will get bored with it.
  - (iv) Basic drives influence our attention.
  - (v) We have immediate and ultimate goals which determine our attention.

### What you have Learnt

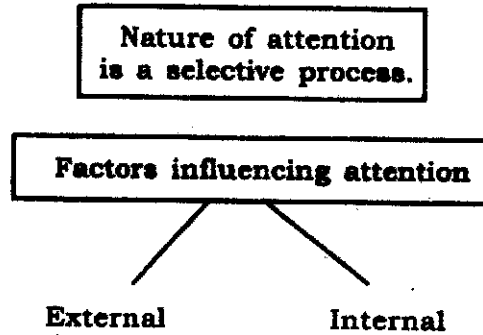
In order to make it easy for you to remember, here are the main points of the lesson :

Perception is selective and purposive



Errors in Perception (Illusion) occur because we misinterpret the stimulus.

Role of motivation and learning in perception is important



### **Terminal Exercises**

- (1) How does figure and background affect our perception ?
  - (2) Why cannot we totally depend on our perception ?
  - (3) How does motivation influence our perception ?
  - (4) What is attention? What are the external factors influencing attention ?
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## Key to The Intext Questions

- 5.1** 1. (i) Background                      2. (a) (iv)  
           (ii) Size                                (b) (iii)  
           (iii) Figure                            (c) (i)  
           (iv) Perception                        (d) (ii)
- 5.2** (i) True                                        (ii) False  
       (iii) True                                    (iv) False  
       (v) True
- 5.3** (i) (a) True                                    (b) False  
           (c) True                                    (d) True  
       (ii) (a) Physical                            (b) Receptors  
           (c) Limitations                        (d) Past  
           (e) Attitude
- 5.4** (i) (d)    (ii) (d)  
       (iii) (b)                                        (iv) (b)
- 5.5** (1) b  
       (2) (i) True                                    (ii) False  
           (iii) True                                    (iv) True  
           (v) True

## Hints to Terminal Exercise

- (1) Consult section 5.3
- (2) Consult section 5.5
- (3) Consult section 5.6
- (4) Consult section 5.7 and 5.8