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5

ATTENTION AND PERCEPTION

When you walk through a busy street, a large number of stimuli bombard your sense organs, but you can take in and use only a very small number of stimuli. For example, a number of people cris-cross each other wearing different colour dresses, cars and buses pass through on the nearby road, shops and buildings also attract your attention. However, only a small and selected part of the available stimulation is registered by an individual for processing and the rest is filtered out. This process of selectively responding to a stimulus or range of stimuli is called attention. Thus, attention refers to all those processes by which we perceive selectively.

You have read in the lesson "Becoming aware of the world around us" that we have ten senses which provide us information about the external and internal world, but some central regulatory mechanism allows selective pick up of the information. Have you ever thought that the dish antena on the roof of your home can pick up all the signals that are available there, but the tuner in the television-set selects only the signal that you want to view, others are filtered out. Similarly, from a large number of stimuli that are available in the external world, attentional processes limit the reception of stimuli selectively. Thus, attentional processes serve the tuner function in filtering information selectively for further processing that finally leads to perception.

OBJECTIVES

After studying this lesson, you will be able to:

- explain the nature and functions of attention;
- describe the process of perception;
- explain perception of shape and illusions;
- understand the problem of space perception and cues used in it;
- describe the factors influencing perception; and
- describe extra sensory perception.

5.1 ATTENTION AND ITS COMPONENT PROCESSES

Attention is a central process and perception is not possible without attentional processes. That means attention precedes perception. Attentional processes serve various functions in the organization of our perceptions and other cognitive functions. The various functions of attention are :

1. Alerting function
2. Selective function
3. Limited capacity channel
4. Vigilance

Let us examine these functions briefly.

1. **Alerting function:** Carefully observe a cat poised at the mouse hole. If you look at the cat carefully in such a situation, you will observe that the ears of the cat are directed towards the mouse hole (to receive the slightest sound of movement inside the hole), eyes are converged and focused on the hole (to get visual image of the mouse as it tries to come out), the four leg muscles are in a state of high alert (to pounce at the mouse as it comes out). There is a complete physiological and mental preparedness to catch the prey. This is an example of alertness, what we call an ***alerting function*** of attention. You will notice that the cat is allocating all its available attentional resources, this demonstrates the alerting nature of attention.

   Let us take another example to demonstrate the alerting nature of attention. When the teacher asks the student in the classroom to pay attention to what he is teaching, it means that the student can voluntarily create conditions that prepare him/her to be receptive and alert in the class. Attention in this sense

refers to a state of focused awareness with readiness to respond (e.g., if asked some question). Distraction occurs when some interference (e.g. loud noise) prevents the individual to continue with the ongoing task.

2. **Selective function:** The most important function of attention is *selectivity*. Selectivity refers to a process by which attention is focused on stimulus or stimuli of ongoing interest and other stimuli are ignored. Selective attention acts as a filter, that allows some information in and the other (unwanted) out. The best example of selective attention is that of "tea-party effect" in selective listening (generally referred to as cocktail –party effect)

   You are in a tea- party organized by your friend. You will observe that in such parties people take some snacks and cup of tea and stand and chat in small groups of four to five people. You are busy chatting with your friend in such one group. When conversation was going on, you suddenly hear someone mentioning your name in one of the adjoining groups. You attention is diverted, from your friend, to whom you were talking, to the group from where you heard your name. Your friend is still talking to you, but your attention is diverted to the other side to listen what someone there is saying about you. Apparently, you pose that you are listening to what your friend is talking but you are unable to register anything. This example demonstrates that we can selectively attend to one task at a time. The ongoing task in this case is ignored.

3. **Limited Capacity Channel:** It has been established through research that we have ***limited capacity*** to process information that is available in the outside world. That is, tasks that require attentional resources cannot be carried out simultaneously because we have limited capacity to process the incoming information. We process the task one at a time, called ***serial processing***. For example, if you are asked to listen to music as well as read this page in your text book, you cannot carry out both the tasks simultaneously or *in parallel*. If you attend to music, then during this period you are not able to comprehend what you were reading and vice-versa. That means, when the task requires ***attentional resources*** (when the task is difficult) you can carry on with one task at a time called serial processing, carrying two tasks simultaneously is not possible.

   However, if one task is highly practised or *routinized* then it is possible to carry on with two tasks simultaneously. For example, when you are a practiced driver, you can drive the car as well as converse with the other person sitting by your side. This is possible because driving requires little or no attentional resources or mental effort (because of high level of practice) and you can pay attention to what the other person is talking. This condition is called *automaticity* in *information processing*.

In this sense we are *serial processors*. That means, two or more tasks that require complex *cognitive processing* cannot be carried out simultaneously. The ***bottle-neck*** is at the central level (in the brain). That is, the brain is not able to handle two or more tasks simultaneously. In this case, computer is better then human beings, in that it can process information in parallel.

4. **Vigilance Function:** Maintaining attention on a task continuously, for some time, like looking at the radar screen, is called ***vigilance*** or ***sustained attention***. It has been found that attending to a task for long is taxing, particularly if the task is monotonous and it leads to decrease in performance. You will be able to understand vigilance better by doing the following activity. (see Box 5.1)

Box 5.1: Understanding vigilance

Activity

Prepare a ramdom list of 500 letters (e.g., c, p, x, a, e, t, m..) and put them in rows with a gap of one stroke between any two letters. Letters should be bold and in lower case. Hand over the sheet of paper containing the rows of random letters to the participant and instruct him/her to cancel all the vowels (a, e, i, o, & u) that appear in the rows as fast as he/she can. After two minutes stop the participant and mark where he/she stopped. Immediately, ask him/her to restart with the task and again after two minutes ask him/her to stop the task and mark where he/she stopped.

Count all the errors of commission (wrongly cancelled letters) and omissions (all the vowels not cancelled that were to be cancelled). Add both the errors and compare the two tasks, one carried out in the first two minutes, and the second one carried out in the second two minutes.

You will find that the number of errors (omission plus commission) in the second part of the experiment will be more than the first. This can be explained as due to central fatigue (brain) occurring due to sustained attention on a monotonous task.

You should also compare vigilance over five trials instead of two and you should also try with random digits (e.g. 8, 1, 0, 5, 4 ...) in place of letters and ask the subject to cancel 1, 4, 5, & 8.

INTEXT QUESTIONS 5.1

State whether the following statements are True or False

1. Attention is a central process. True/False
2. Perception is possible without attention. True/False
3. Attention refers to all those processes by which we perceive selectively. True/False
4. The four functions of attention are:

   i. .....

   ii. .....

   ii. .....

   iv. .....

5.2 CREATING A WORLD OF REALITY : PERCEPTION

We live and deal with a three dimensional world which contains objects of different shapes and forms, sizes, and colours. Generally, our experience of the external world is quite accurate and error free. However, we do encounter illusions (e.g. perceiving a rope in the night as snake). To survive and live in this world we must get accurate information from our environment. This information is gathered by our sense organs, ten in all. Eight of these are external (vision, audition, smell, taste, touch, warmth, cold, and pain) and two internal or deep senses (e.g., vestibular and kinesthetic).

Fig. 5.1: *Figure and Ground*

You have already studied the chapter on sensory processes (lesson 4, "Becoming aware of the world around us") and in this section you will learn about perception. How do we construct a world of reality from the information that we receive from our sense organs? The difference between sensation and perception is not clearly mentioned, where one ends and the other starts is arbitrary. The division between sensation and perception is made for the sake of scientific analysis. Most psychologists treat perception as interpretation of sensation. For the purpose of scientific investigation we consider the sensory system to include reception of stimulation by sensory organs, *transduction*, transmission of *neural impulses* through afferent *neurons*, and reaching the appropriate area in the cerebral cortex (e.g., visual stimulation reaching occipital lobe in the cerebral cortex).

In this section you will study how our sensory system gathers information from the external and internal world. Further, by taking into account past experience, knowledge, memory, motivation, cultural background, beliefs, and attitudes, etc. from internal system, the brain makes sense out of the signals that it receives from different sense organs. Thus, how we receive information from the external world and with the help of internal system we construct a world of reality. This is all we study in perception. We have already considered the role of attention in perception. Thus, multiple and complex nature of stimulation is available to us from the external world and with the operation of attentional processes we selectively receive some information and filter out the rest. In the following paragraphs you will study some important aspects of perception.

5.3 PERCEPTION OF SHAPE

The terms "shape" and "form" are often used interchangeably. The study of shape perception raises many questions, such as : How do we perceive shape? Is our ability to perceive shape and form innate or learned? How do we segregate figure from ground? Are there laws that govern the organization of perception? What are illusions and why do these illusions exist? These are some questions that we shall try to explore in this section.

How do We Perceive Shape?

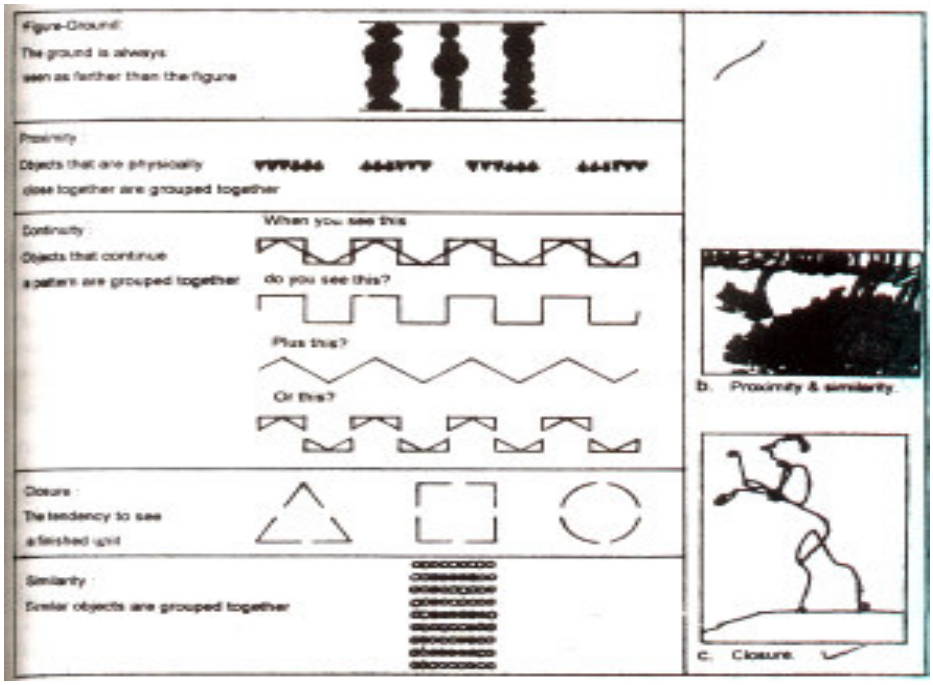


Fig. 5.2:

Shape or form is defined as areas of visual field that are set off from the rest of the field by visible contour. Werner in 1935 demonstrated how contours are perceived and their role in the perception of shape or form. To perceive a shape, its contours must be sharp enough to mark off region that is called shape. For example, see Figure 5.1 in which the contour has been made to clearly delineate an area that is a circle. If the contour becomes too weak or disappears, the shape also disappears.

Figure and Ground

Imagine, if figure-ground segregation was not there how confusing the world would have been for us. Perhaps, perceptual organization would not be possible. For example, see figure 5.1 in which the random shape stands out as a figure and page becomes back ground. Another example, what ever is written on the black-board by your teacher becomes "figure" and the black board becomes a "ground". You cannot read anything on the blackboard until and unless the figure (words) is segregated from the back ground (black-board). In our visual field (whatever we look out in the environment around us) some area is segregated to form figures and the rest is relegated to the background (that part which is not important for us) against which the figures are perceived. Figure-ground segregation is essential for the perception of shape. It is not only the characteristics of visual perception, it is there in all sense modalities. For example, when you listen to the music, the vocal part of the music (what a singer sings) becomes figure and the instrumental part is relegated to the background. If the listener is interested in the instrumental part ("figure") of the music then the vocal part becomes "ground".

Let us know how this occurs.

The distinction between figure and background is presented below.

1. The figure has a shape, while the ground is relatively shapeless.
2. The ground seems to extend behind the figure.
3. The figure has some of the characteristics of a thing, whereas the background appears like unformed material.
4. The figure usually tends to appear in front, the ground behind.
5. The figure is more impressive, meanigful, and better remembered.

5.4 THE DETERMINANTS OF FIGURE –GROUND ORGANIZATION

The Gestalt psychologists in Germany, principally Kohler, Koffka, and Wertheimer, proposed that the brain has the innate capacity for organizing perceptions. They

identified the laws of organiztion which determine the way in which we perceive the objects. They maintain that electrical fields in the brain are responsible for the organization of perception. They were also interested in exploring figure-ground distinction, what makes figures stand out against a background.

Laws of Perceptual Organization

(i) **Good Form (Law of Pragnanz):** This law states that perceptual organization will always be as "good" as the prevailing conditions allow. The simplest organization requiring the least cognitive effort will always emerge. ***Pragnanz*** means that we perceive the simplest organization that fits the stimulus pattern.

(ii) **Proximity:** All the stimuli that occur together in space or time will be organized together. In Figure 5.3 you can observe three groups of two vertical lines. You will find it difficult to see six individual lines.

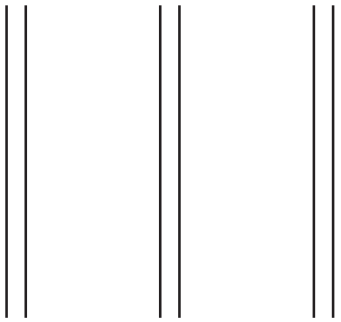


Fig. 5.3: *Law of Proximity*

(iii) **Similarity:** Other things being equal, elements which are similar in structure or have common characteristics will be grouped together. In Figure 5.4, five squares, five triangles, and five circles in columns are grouped together.

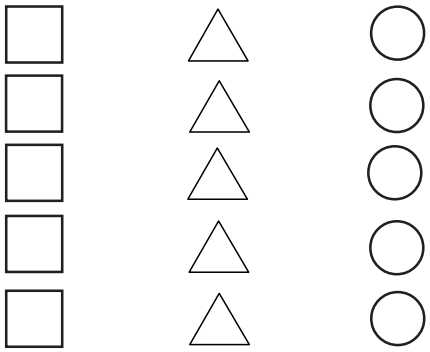


Fig. 5. 4: *Law of similarity*

(iv) Closure: An incomplete figure will be seen as a complete one. Figure 5.5, is a figure consisting of incomplete lines, that have gap in them. It is perceived as a triangle despite the fact that its sides are incomplete. A closure like phenomenon yields subjective contours. In Figure 5.5 you will observe that the triangle does not exist, (the lines forming a triangle donot exist). Still it is compelling to perceive a triangle in the Figure.

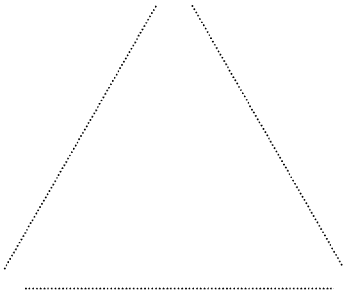


Fig. 5.5: *Law of closure*

5.5 ILLUSIONS

Illusions are misperceptions resulting from misinterpretation of sensory information. Illusions are also known as ***false perceptions***. For example, if there is a thick rope lying on one side in the dark, it could be perceived as a snake. Illusion is a normal phenomenon which is perceived by all human beings and animals.

You must have experienced ***moon illusion***. The moon in the horizon looks far bigger in size than moon in the zenith. We know, that the retinal image of the moon at the horizon or zenith is the same (moon being at the same distance from the earth), however, its *perceived size* differs a lot. One explanation takes into account the *size –distance* relationship. Helmholtz long back suggested that judgement of size is related to the judgement of distance. For example, *retinal angle* being constant, if the judged distance of an object is more than the actual *physical distance* then the perceived size will also be larger than the actual *physical size* and vice-versa. It is contended that with retinal image being the same, the perceived distance of the moon in the horizon is more than the perceived distance of the moon in the zenith. Thus, the perceived size of the moon will be larger at the horizon than the zenith.

Geometrical Illusions: there are quite a few illusions that can be demonstrated by drawing some lines, these are called geometrical illusions. The most famous is ***Muller-lyer illusion***. See figure 5.6 for some geometrical illusions.

Three different types of geometrical illusions

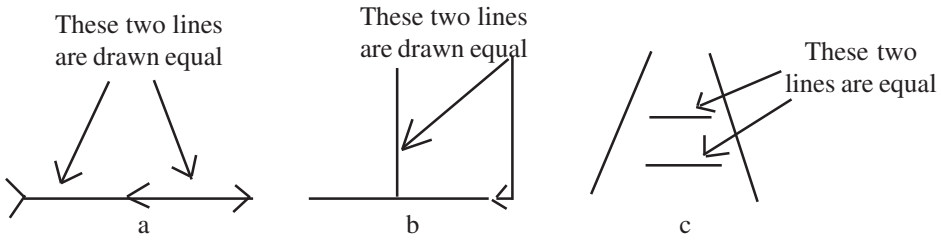


Fig. 5.6: *a. Muller–Lyer illusion, b. Vertical horizontal illusion, c. Panzo illusion*

5.6 PERCEPTION OF SPACE

Perception of *space* also refers to the perception of *size* and *distance*. The problem emerges from the fact that the image of the three dimensional world is projected on the two dimensional *retina*. This raises the question: From the two dimensional image, how do we perceive the three dimensional world? Or in other words how do we perceive *depth* and *distance*? The problem of space perception is depicted in Figure 5.7.

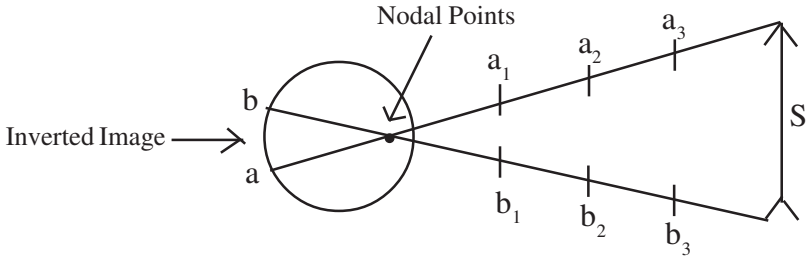


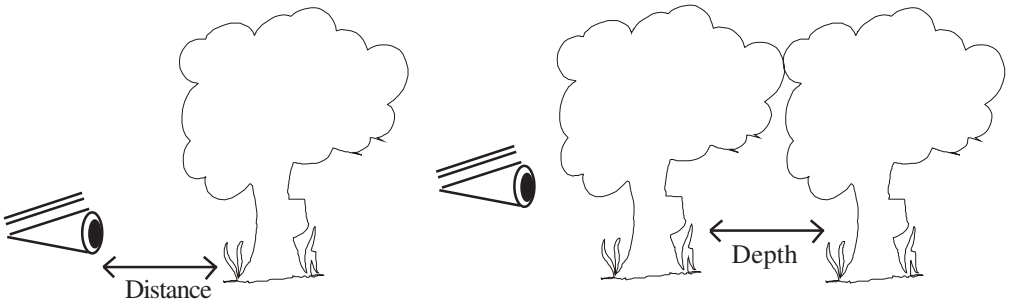
Fig. 5.7: *The problem of Space perception*

It can be observed from Figure 5.8 that the points a_1, a_2, a_3, … on the line of sight fall on the retina at "a". Similarly, those of points b_1, b_2, b_3,… fall on "b" on the retina. (The image of the external objects on retina is inverted). The available information on the retina can only indicate the direction of these points in space, but not in any obvious manner about distance from the eye. That is, the location of a_1, a_2, and a_3 or b_1, b_2 and b_3.

However, in our day-to-day experience we know that our perceptions about the depth and distance are quite accurate. If our judgement about the depth and distance were not accurate we would be colliding with the objects in the external world. We cannot drive bicycle or scooter if our judgments of depth and distance are inaccurate. The problem is that how do we accurately perceive space (depth and distance) from two dimensional image on the retina. You will find shortly that the perception of space is possible because of the various *cues* availabile to us.

Before we study the various cues, it will be in order to have a clear understanding of various terms that are used here.

Distance: This refers to the absolute spatial extent (D) between the observer and the object. See Figure 5.8 a. Corresponding to the physical distance (D) there is a perceived distance (D') sometimes referred to as apparent distance also.



a. Physical extent between individual and object

b. Physical extent between two objects as perceived by individual

Fig. 5.8: *a. Distance b. Depth*

Depth: It is the Relative spatial extent between two objects as viewed by the observer. For example, the relative extent between the two trees as viewed by the observer (See Figure 5.9 b). Corresponding to the physical depth is the perceived depth, the depth perceived by the individual.

Size: the object has a physical size (S) that is out there. The individual perceives this, it is called perceived size (S').

It is interesting to understand that we perceive depth and distance with the help of various *cues* available to us. These cues may be divided into three categories

i. Non- Visual Cues

ii. Binocular Cues

iii. Monocular Cues.

We shall discuses these cues briefly.

(i) Non-visual Cues

Accommodation and **Convergence** are the two non-visual cues. These cues are called 'non-visual' because they do not emanate from the retinal image, as is the case with other cues.

a. Accommodation: What we call focusing in camera, in the case of eye we call **accommodation**. The image of the external objects is focused on the retina with the help of lens in the eye. The lens is adjusted by the **Ciliary muscles** to focus far and near objects on the retina. The ciliary muscle changes the **convexity** of the lens so that the image of the object is clearly focused and this process is called **accommodation**.

If the object is relatively at a distance (more than 2 meters or so) the ciliary muscle is relaxed. When the object comes nearer and nearer the muscle contracts more and more, making the lens more convex. The degree of contraction of the ciliary muscle, signaled to the brain through **Kinesthetic impulses** is a possible cue of distance. That is, if the object is farther away from the viewer, the ciliary muscle is relaxed and when the object is nearer the ciliary muscle is tense. The extent of contraction in the ciliary muscle fed back to the brain is the cue of accommodation. However, research indicates that accommodation is a weak cue of perception of depth and distance.

b. Convergence: When you read the letters of this printed line, you converge your eyes (with the help of six **intra-ocular muscles located** outside each eye) to bring the image in both eyes to fall on the **fovea** of each eye for **fusion** and clear vision. The extent of convergence achieved is signaled to the brain and this provides a cue to distance. For example, if the object is nearer the angle of convergence will be large and as the object goes farther away the angle of convergence decreases. For objects at a far away distance the eyes are more or less parallel. The extent of convergence achieved is fed back to the brain and it is a cue to distance. Again, research indicates that like accommodation it is a weak cue of perception and distance.

(ii) Binocular Cues

Binocular cues, unlike the two cues discussed above, emanate from the retinal image itself. These cues are:

a. Double images

b. Binocular disparity

a. Double images: You have already learnt that when we **fixate** our eyes on an object in space, fusion takes place and we see one object. However, when we fixate on an object, all other objects nearer or farther than the fixation point fall on the **non-corresponding** points and produce double images.

You can try this phenomenon. Take two pencils, hold them vertically in a line in front of your nose, one nearer and the other farther away. Now, fixate your eyes on the nearer pencil, the image of this pencil falls on the corresponding points (as

you converge your eyes and accommodate) and fusion will take place. You will be able to see the pencil. However, the image of the other pencil will be double, as it falls on the **non-corresponding** points and fusion will not take place. Similarly, if now you fixate on the farther pencil, the image of the nearer pencil will be doubled.

However, the double images you have just experienced are not similar in nature. The first will be uncrossed double image and the second will be crossed. The phenomenon just explained can be seen in Fig 5.9 A & B.

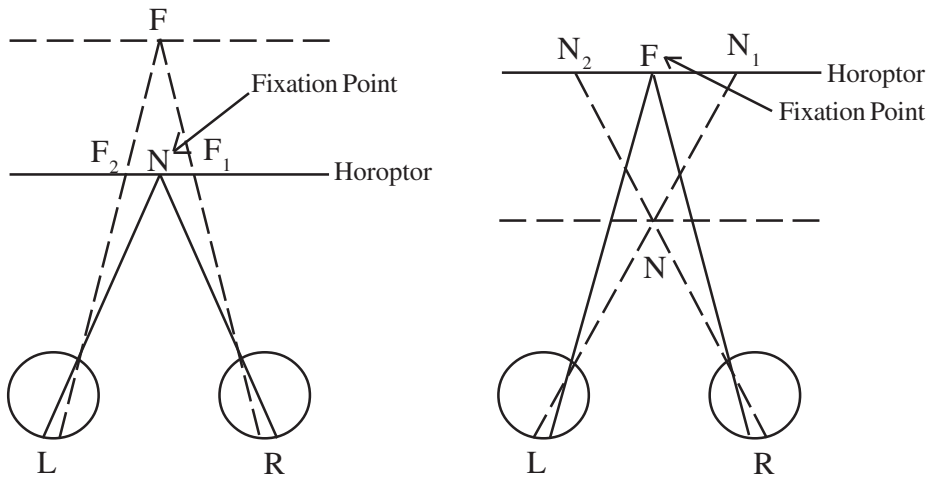


Fig. 5.9: *Double images A. uncrossed; B. Crossed. (L: Left Eye; R: Right Eye; N: Near Point; F : Farther Point)*

Thus, when we get uncrossed double images, the object is farther than the fixation point. On the other hand when we get crossed double images then the object is nearer than the fixation point.

b. Binocular Disparity: Objects that are nearer and farther than the fixation point project their retinal images on the non-corresponding or **disparate areas** of the two retinas. Greater the distance from the fixation point, greater will be the binocular disparity. That is, disparity increases as the distance of the object from the fixation point increases. This retinal disparity is the possible cue about the distance of the object from the fixation point.

(iii) Monocular Cues

Monocular Cues are also called **pictorial cues** because they include the kind of depth information found in the photographs and paintings. These cues are extensively used by the artists in their paintings. These cues are

a. Interposition

b. Aerial perspective

c. Linear perspective

d. Lights and Shadows

e. Familiar size

f. Texture-Density Gradient

Let us consider these cues briefly.

(a) **Interposition:** When an object (A) partially blocks another object (B), the object blocked is perceived farther away than the object blocking it (See Fig. 5.10). This cue develops early in the children.

Fig 5.10: *Interposition. The tree is perceived farther than the house*

(b) **Aerial perspective:** When you look at buildings in the city, buildings close by look clearer and their boundaries (contours) are well defined in comparison to distant ones, which look gray and hazy. The buildings, trees, and other objects that look hazy are perceived far away in comparison to those which look clear.

(c) **Linear Perspective:** When parallel lines recede into the distance, as rail road tracks, they converge towards a point in your retinal image (see Fig. 5.11). Further, the farther away two objects are in the visual field, the closer they will appear to be to each other. On the other hand, the two objects nearer to us appear further apart from each other. This cue appears much later in children.

(d) **Lights and Shadows :** We are often aware of the source and direction of light. It is generally from above, as sunlight. The shadows cast by one object on another can indicate which object is farther away.

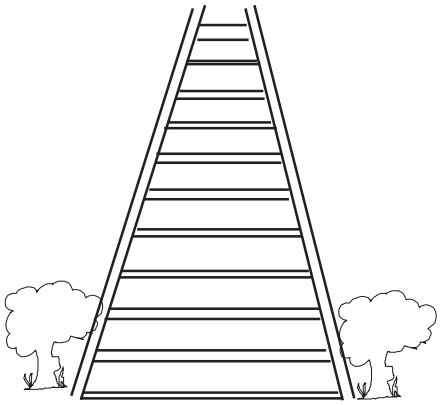


Fig. 5.11: *Linear perspective*

(e) **Familiar Size:** Because you know the height of your friend, you can judge the distance at which he is standing. This is possible because we always store the memory image of objects that we see. When we look at an object which is away from us we can interpret the distance form the retinal image by taking into account the familiar size. You can do this activity. Take a playing card and present it to your friend at a distance of 10 ft from him. Ask him to judge the distance at which the card is placed. He will be quite accurate in judging the size of the playing card. Because he is familiar with the size of the card, which is always of the same (standard) size.

(f) **Texture-Density Gradient :** Look at the ploughed field, the nearer surface looks rough and as we extend our vision farther away the texture gets finer. Similarly, if you look at the grass nearby, you will be able to see the blades of grass clearly, but as you extend your vision to a distant point the ground looks as if painted green and the blades of the grass are no more visible. This texture gradient is a cue to distance. The objects lying on a surface that look fine and smooth in texture are perceived at greater distance than those objects on a rough surface.

5.7 FACTORS INFLUENCING PERCEPTION

At any particular time there are many competing stimuli out there which will gain our attention and result in perceptual organization. The stimulus characteristics are important, as are our own internal needs, motivations, and our specific socio-cultural back ground in which we have been reared. All these factors, stimulus variables and internal factors peculiar to an individual, determine how our perceptions are organized. In the following section you will learn how the stimulus and internal factors determine what we perceive.

i. Context and Set-effects

ii. Needs and motives

iii. Social and Cultural factors.

i. Context and Set-effects

A given stimulus may provide radically different perceptions because of the immediate **context**. The context creates an expectation in our brain (top-down phenomenon) that influences our perception at a particular moment. For example, in noisy conditions you are verbally provided with a sentence "eel is moving". You will perceive the word "eel" as "wheel" because of the context provided by the later part of the sentence. Similarly provide a stimulus verbally "eel the orange". You will perceive the word "eel" as peel. This is because the later word "orange" provides an expectation for the perception of earlier word.

Perceptual sets also influence our perceptions. Perceptual set refers to our mental expectancies and predispositions to perceive one thing and not another. Perceptual set can influence what we hear as well as what we see. Broadly speaking our educational, social, and cultural experiences shape what we perceive. In other words, our learned assumptions and **beliefs** help us in organizing our perceptions. For example, if we hold very strong beliefs about God, the temple is perceived as a place that gives us peace, love, solace, affection, and a satisfying experience. Similarly, **stereotypes** (a generalized belief about a group of people) help us to perceive persons we meet first time. Much of our social interaction is determined by the stereotypes we hold about individuals and groups.

(iii) Needs and Motives

We have seen above that immediate **Context** and perceptual **sets** affect our perceptions. Similarly, personal variables, like needs, emotions, values, personality, etc. influence our perceptions. An example will demonstrate the effect of need state on the perception of an individual. Two men, a hungry and another thirsty, go to a restaurant and the waiter hands over to each a menu for obtaining order. It was found that, at a quick glance, the hungry man could see eatable items in the menu and the thirsty drinks. This example supports the hypothesis that need states of individuals affect their perceptions. It has been found that emotions, motivation, and personality factors influence our perceptions. For instance, while studying the effect of reward and punishment on the organization of one's perception, it was found that children perceived significantly more often rewarded aspects of the figure-ground stimuli in comparison to the punished.

(iii) Social and Cultural factors

Perceptual learning and development takes place in the context of socio-cultural environment. Our perceptions reflect the effect of past learning and, therefore, if learning and socialization takes place in a particular socio-cultural background it will be reflected in our perceptions. A large number of studies support the hypothesis that culture influences our perceptions. It has been found that the Africans living in dense forests displayed greater illusion in the Vertical – Horizontal figure and Western-Urbans in the Muller –Lyer figures. The differences have been explained due to their experiences in different culture. So, it should be clear to you that cultural background influence the individual to perceive the world differently.

5.8 EXTRA – SENSORY PERCEPTION (ESP)

We have observed in the foregoing discussion on perception that sense organs provide the raw material or data on which our perceptions are organized. However, there is another type of perception in which perception is organized without the involvement of senses, called **Extra-Sensory Perception** (ESP). As the word denotes, extra sensory perception is perception without (physical) stimulation.

Extra sensory perception includes phenomenon like **telepathy, clairvoyance, and telekinesis**.

Telepathy: It refers to transfer of thought between two persons at different places.

Clairvoyance: Perceiving objects and events without the involvement of senses.

Telekinesis: Controlling objects without touching them.

ESP is considered a para-psychological phenomenon. Psychologists, with scientific attitude, are generally skeptical about the phenomena of ESP.

INTEXT QUESTION 5.2

1. Define perception.

   _____

   _____

2. Shape or form is defined as areas of visual field that are set off from the rest of the field by _____.
3. Perceptual organizations will not be possible without _____ segregation.
4. Gestalt psychologists identified _____ which determine our perceptual organizations.

5. Illusions are _____ resulting from misinterpretation of sensory information.
6. The moon in the horizon is perceived bigger in size than moon in the zenith, it is called _____.
7. Distance and depth is perceived with the help of _____.
8. The three category of cues are:

   i. _____

   ii. _____

   iii. _____

WHAT YOU HAVE LEARNT

- Attention plays an important role in perception. Its most important function is to filter out information that is not relevant at a particular moment; that is selecting the input of information for further processing. The four important functions of attention are: Alerting function, Selective function, Limited Capacity channel, and Vigilance.
- Alerting function refers to the processes by which an organism is physiologically and mentally prepared for a particular situation. It prepares an individual for a task with readiness to respond.
- Selectivity refers to the process in which the stimuli of interest are focused and others are ignored or filtered out.
- The task that requires attentional resources cannot be carried out simultaneously. The information is processed serially; it is due to limited capacity channel.
- Maintaining attention on one task for some time is called sustained attention or vigilance. Sustained attention on some task, especially of monotonous nature, leads to decrement in performance.
- How we construct a world of reality from information that we receive from our sense organs, is what we study in perception.
- By taking into account our past experience, knowledge, memory, motivation, cultural-background, etc. we construct a world of reality (perception).
- We studied perception of shape or form and also about space perception.
- Shape is defined as areas of visual field that are set off from the rest of the visual field by visible contour.
- Contours determine the shape.
- Perceptual organization is not possible without figure-ground segregation. Figure-ground is possible in all sense modalities - e.g. vision, audition, tactile, etc.

- The Gestalt psychologists in Germany proposed that the brain has the innate capacity for organizing perceptions - laws of organization.
- Laws of perceptual organization are: Good form, Proximity, Similarity, Closure, etc.
- Illusions are misperceptions resulting from misinterpretation of sensory information.
- Perception of space refers to perception of size and distance.
- The problem of space perception emanates from the fact that the retinal image is two dimensional. The third dimension is perceived with the help of various cues of depth and distance.
- The three sets of cues available to us are
  - Non-visual cues
  - Binocular cues
  - Monocular cues
- Factors that influences our perceptions are:
  - Context and Sets
  - Needs and motivations
  - Social and cultural factors

TERMINAL EXERCISE

1. What are the main functions of attention?
2. Describe the laws of perceptual organization.
3. Discuss the nonvisual cues of space perception.
4. Describe the factors that influence perception.

ANSWER TO INTEXT QUESTIONS

5.1 1. True 2. False 3. True

4. i. Alerting Function
   ii. Selective Function
   iii. Limited capacity channel
   iv. Vigilance

5.2 2. Visible contour 3. Figure-ground 4. Laws of organizations

5. misperceptions 6. moon illusion on 7. cues

8. i. Non-visual cues

ii. Binocular cues

iii. Monocular cues

HINTS FOR TERMINAL EXERCISE

1. Refer to section 5.3
2. Refer to section 5.3
3. Refer to section 5.3
4. Refer to section 5.3