Semester I

UNIT 2:Perceptual Processing

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PERCEPTUAL PROCESSING

The **perceptual process** is the sequence of **psychological** steps that a person uses to organize and interpret information from the outside world. ... A person observes. The person uses perception to select objects. The person organizes the perception of objects. The person interprets the perceptions.

stimulus: Anything effectively impinging on any of the sensory apparatuses of a living organism, including physical phenomena both internal and external to the body.

Sensation involves the relay of information from sensory receptors to the brain and enables a person to experience the world around them.

Perception is the **process** of selecting, organizing, and interpreting information. This **process** includes the perception of select stimuli that pass through our **perceptual** filters, are organized into our existing structures and patterns, and are then interpreted based on previous experiences.

Sensory threshold: The point at which a stimulus causes a sensation within an individual; below the sensory threshold, there will be no sensation.

Sensory Absolute Thresholds

The absolute threshold is the lowest intensity at which a stimulus can be detected.

Sensory Difference Thresholds

The minimum amount of change in sensory stimulation needed to recognize that a change has occurred is known as the just-noticeable difference.

Characteristics

- Perception is a process: It is not a product or outcome. It is initiated by input and followed by output/response.
- Perception involves sensation: sensation precedes perception.
- Perception needs the presence of stimulus: like sensation perception also occurs in response to stimulus.
- Perception provides knowledge about the selected information: all the stimuli are not perceived. We select the sensory impressions.
- Perception is preparation to response. It is the first step toward reaction/response/behavior of an organism. It helps in preparation of self.

- Characteristics of the perceiver.

  The perceptual process is influenced by the perceiver's:

  - Past experiences.
  - Needs or motives.
  - Personality.
  - Values and attitudes.

- Characteristics of the setting.

  The perceptual process is influenced by the setting's:

  - Physical context.
  - Social context.
  - Organizational context.

Perception which is derived from the term “Percept” refers to a series of processes which we have to undergo to make sense of the stimuli which we encounter mentally by organization and interpretation of information about the environment we live in or are subjected to.

Sensory receptors detect the stimuli or the sensory information and pass it onto the central nervous system through a process of transduction which is the process of conversion of sensory stimulus to action potential.

Perception on the other hand will depend on the way in which one interprets the sensory stimuli. **Sensation is followed by perception**. The process of perception starts with the exposure to a stimuli present in the environment and concludes with the interpretation of the stimuli or is experienced consciously. It is perception which determines how we will actually interpret the sensory information or the stimuli and interact with the environment

Sensory information from the environment

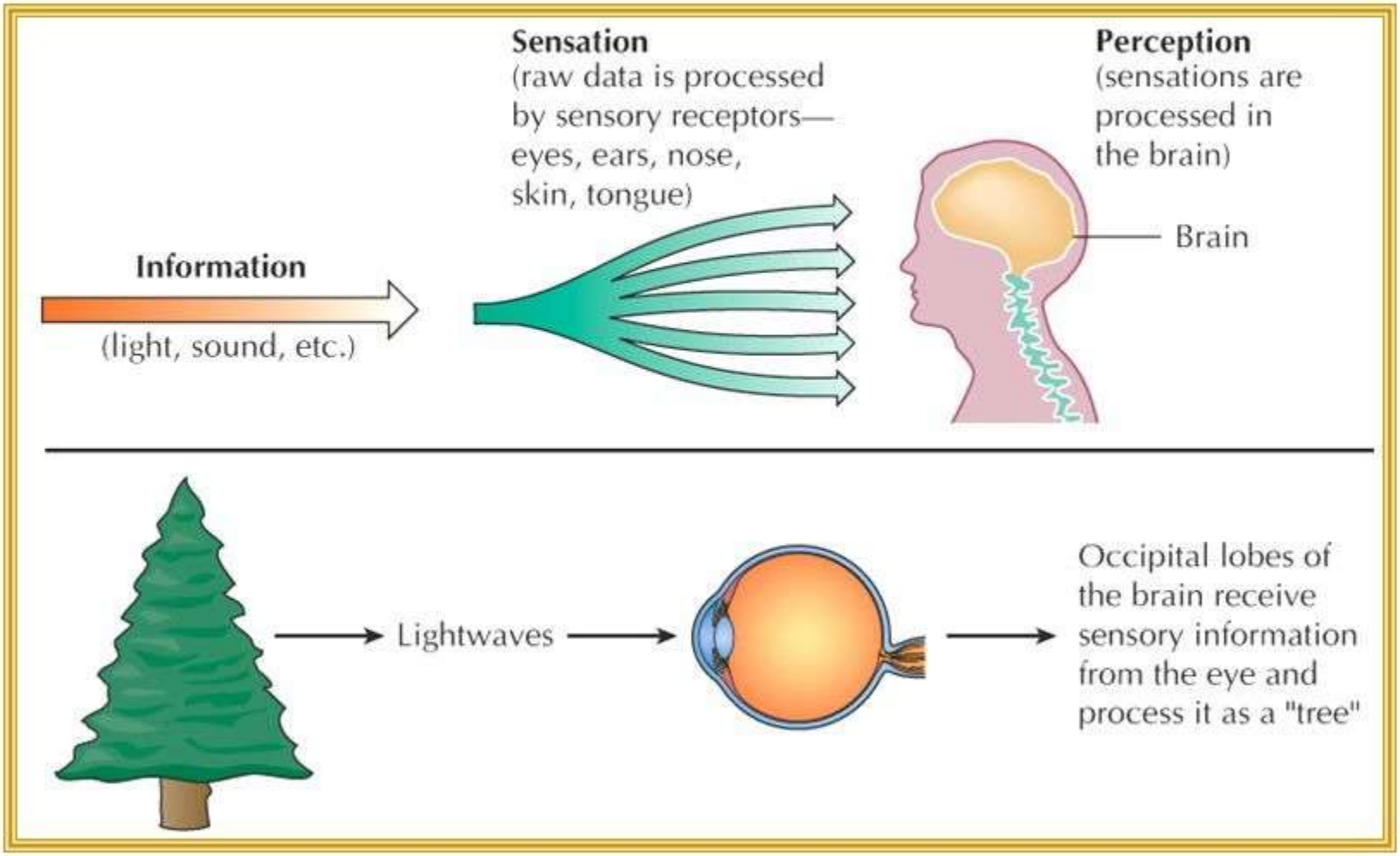
Sensation refers to the physical stimulation of the sensory receptors.

Perception involves interpreting this sensory information.

5 senses

1. Visual (sight)
2. Auditory (sound)
3. Olfaction (Smell)
4. Taste
5. Touch

Sensation Vs. Perception



The process of perception **entails top-down and bottom-up processing,**

bottom-up because perceptual process starts with the inputs received from the sensory receptors.

It also involves **top-down processing** because the perceptual process is concerned with the interpretation of the sensory stimuli based on our knowledge, thoughts and past experiences.

The perceptual process is psychological while sensation is more of a physical process.

Though perceptions are built from the sensory inputs, but it is not necessary that all sensations might result in perception.

Attention is also one of the crucial factors which influence sensation and perception. Attention plays a crucial role in determining what is being sensed or perceived. Other factors like motivation, beliefs, life experiences, prejudices, our values and environmental factors or the cultural context, equally influence our perception.

Sensation and perception complement and balance each other well. In the absence of sensation or perception, it will be difficult for us to make sense out of the stimuli which is presented by the outside world or the environment around us. One cannot perceive of sensation without perception or even perception without sensation. However, both are different as they process information differently. In the process of sensation, our sensory organs by being exposed to a stimulus in the environment absorb energy, which is then converted to neural impulses and transmitted to the brain by the sensory receptors. In the case of perception, the brain organizes the information and interprets it into something meaningful, which is again influenced by **selective attention and perceptual expectancy**

Selective Attention is the process of demarcating what is important and less relevant. For example, a group of employees while attending a training program may selectively follow or understand the instructions of the trainer as they might be dissuaded by other factors like the trainer's personality, voice quality, training hall ambience or the other participant's participation.

Perceptual expectancy on the other hand implies, how and what we perceive will depend on our past experiences, biological factors or the culture. For example, by seeing a painting on the wall you might not be able to interpret the message which the artist wishes to convey though his work of art. But on listening from someone, one may develop an understanding about the theme of the painting and start finding meaning in it.

How It Works

The perceptual process is a sequence of steps that begins with the environment and leads to our perception of a stimulus and action in response to the stimulus. It occurs continuously, but you do not spend a great deal of time thinking about the actual *process* that occurs when you perceive the many stimuli that surround you at any given moment

Perception acts as a filter that allows us to exist and interpret the world without becoming overwhelmed by the abundance of stimuli.[1]

Steps in the Perceptual Process

- The Environmental Stimulus
- The Attended Stimulus
- The Image on the Retina
- Transduction
- Neural Processing
- Perception
- Recognition
- Action

Impact of Perception

In order to see the impact of perception, it can be helpful to look at how the process works. This varies somewhat for every sense. In the case of visual perception:

1.The environmental stimulus: The world is full of stimuli that can attract attention through various senses. The environmental stimulus is everything in the environment that has the potential to be perceived.

2.The attended stimulus: The attended stimulus is the specific object in the environment on which attention is focused.

3.The image on the retina: This involves light actually passing through the cornea and pupil and onto the lens of the eye. The cornea helps focus the light as it enters the eye, and the iris of the eye controls the size of the pupils in order to determine how much light to let in. The cornea and lens act together to project an inverted image onto the retina.

4.Transduction: The image on the retina is then transformed into electrical signals in a process known as transduction. This allows the visual messages to you and interact with it in ways that are both appropriate and meaningful transmitted to the brain to be interpreted.

5.Neural processing: The electrical signals then undergo neural processing. The path followed by a particular signal depends on what type of signal it is (i.e. an auditory signal or a visual signal).

6.Perception: In this step of the process, you perceive the stimulus object in the environment. It is at this point that you become consciously aware of the stimulus.

7.Recognition: Perception doesn't just involve becoming consciously aware of the stimuli. It is also necessary for the brain to categorize and interpret what you are sensing. The ability to interpret and give meaning to the object is the next step, known as recognition.

8.Action: The action phase of perception involves some type of motor activity that occurs in response to the perceived and recognized stimulus. This might involve a major action, like running toward a person in distress, or something as subtle as blinking your eyes in response to a puff of dust blowing through the air. The perceptual process allows you to experience the world around us.

ROLE OF ATTENTION IN PERCEPTION

Selective **attention** is the ability to focus on one stimulus when presented with many stimuli. ...

Changes in the capacity for **attention** affect **perceptual** development. Because of this, the development of **attention** allows a child to learn to use their senses in strategic ways and develop new skills.

For the most part, our ability to focus our attention on one thing while blocking out competing distracters seems automatic. Yet the ability of people to selectively focus their attention on a specific subject while dismissing others is very complex.

Difference between Sensation and Perception

Sensation	Perception
The process of receiving information through your senses, which can be interpreted by your brain	The process of interpreting the information received by the sensation process
The source is the stimuli received by your senses	The source is the information sent to the brain through sensation
Sensation results in raw information from your senses	Perception results in meaning of that information
Sensation is a general biological process	Perception is a more psychological process because information that is already stored

THANK YOU