PERCEPTION

PROFESSOR AYE AYE OO

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WHAT DO YOU SEE HERE?

PERCEPTION

WE DON'T SEE THINGS AS THEY ARE,
WE SEE THINGS AS WE ARE.

Definitions

- Sensation: absorbing raw energy (e.g., light waves, sound waves) through our sensory organs
- Transduction: conversion of this energy to neural signals
- Attention: concentration of mental energy to process incoming information
- Perception: selecting, organizing, and interpreting these signals

Overview: Sensation and Perception

- Energy contains information about the world (usually incomplete, full of noise, and distorted)
- Accessory structure modifies energy
- Receptor transduces energy into a neural response
- Sensory nerve transmits the coded activity to the central nervous system
- Thalamus processes and relays the neural response
- Relayed to specialized areas of the cortex
- Perception of the world is created

What is Perception?

- **A process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment.**

- **People's behavior is based on their perception of what reality is, not on reality itself.**

PERCEPTION

"Perception is a process by which people regard, analyze, retrieve and react to any kind of information from the environment."

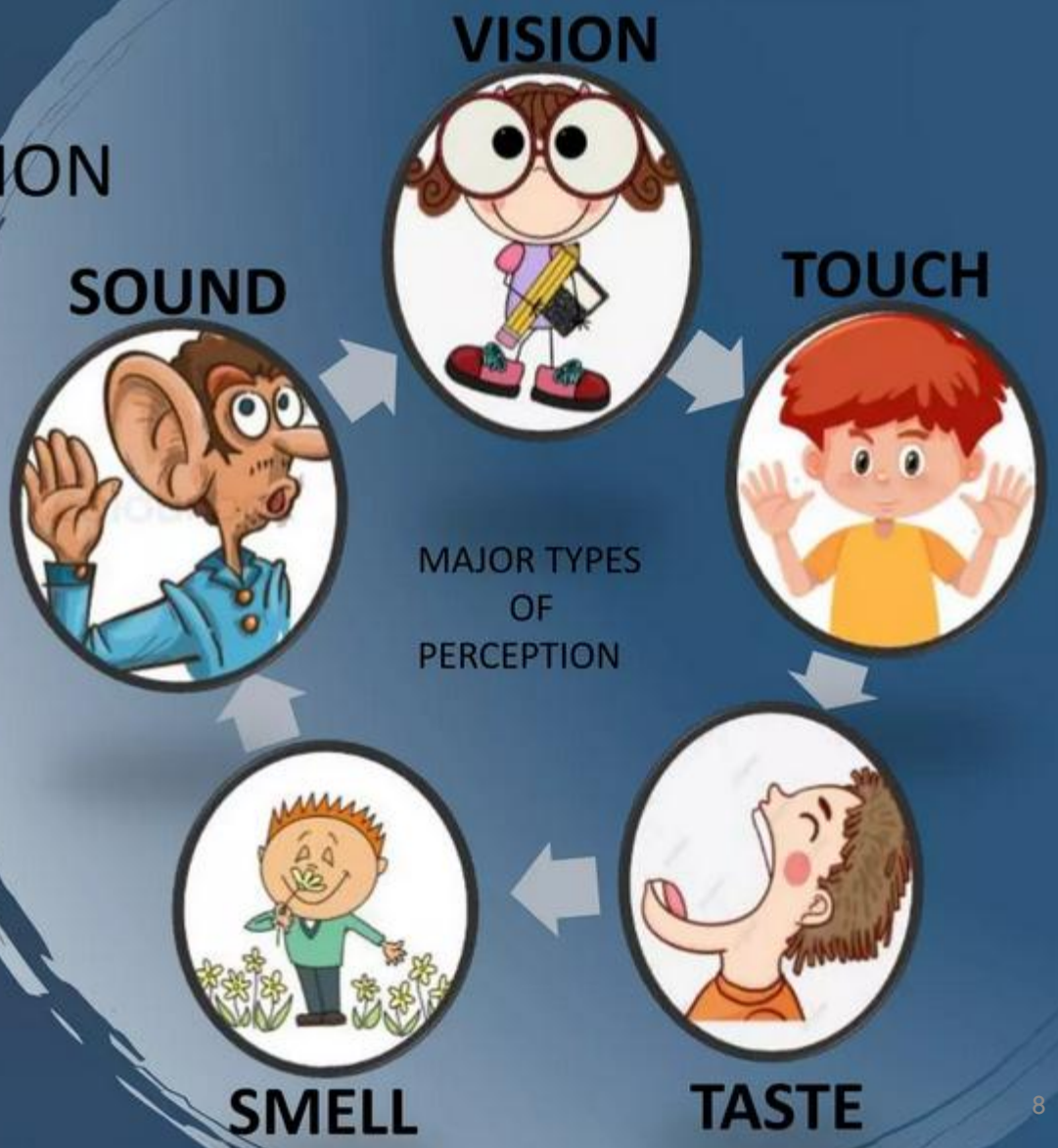
"Perception may be defined as a process by which individuals organize and interpret their sensory impressions in order to give meaning to their environment."

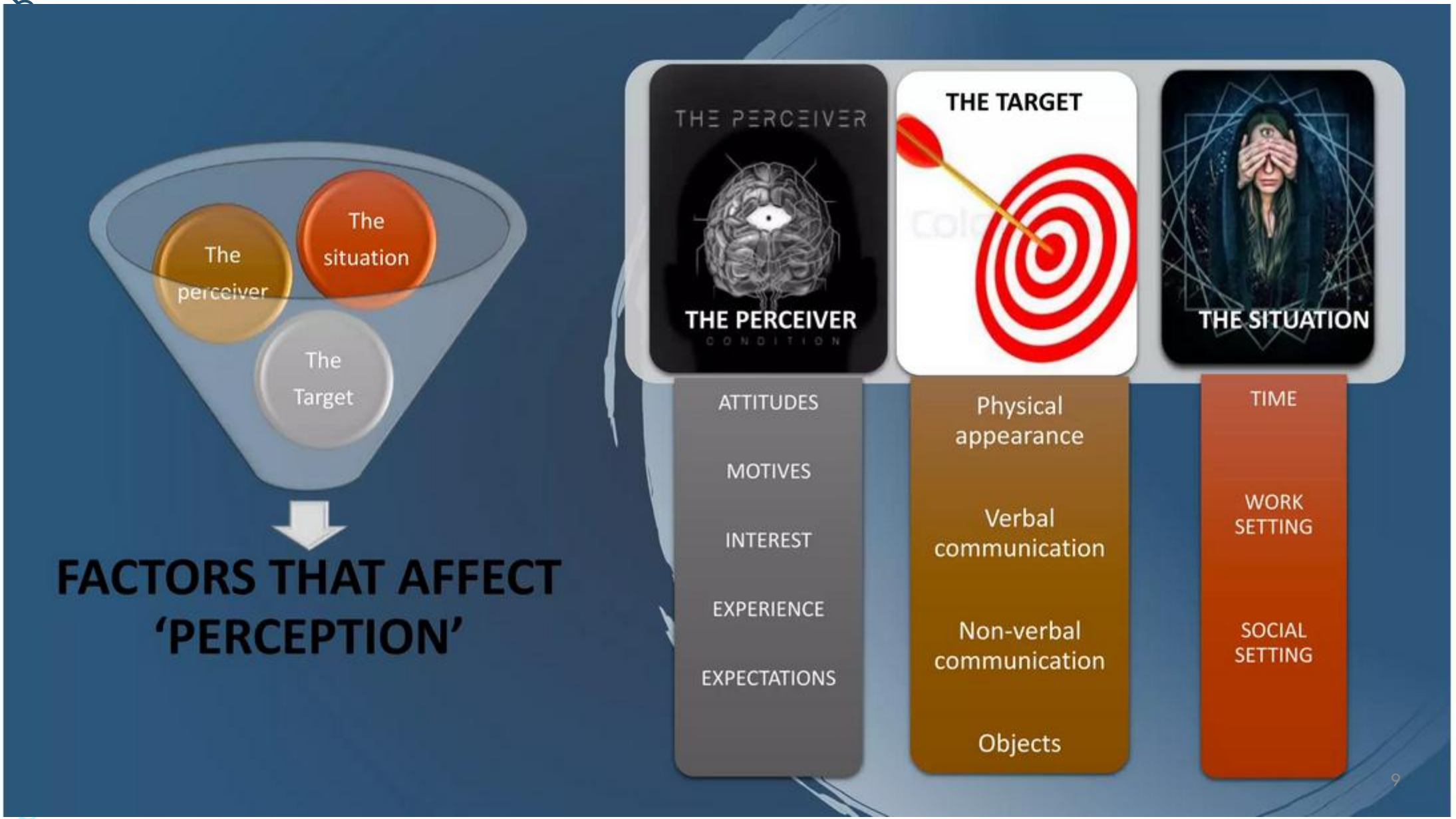
S.P. ROBBINS

In simple words we can say that perception is the act of seeing what is there to be seen. But what is seen is influenced by the perceiver, the object and its environment

CHARACTERISTICS OF PERCEPTION

- It is both subjective and objective.
- It is shifting, not permanent.
- It is selective.
- It is a result of past experiences.
- It is driven by motivations and interests.




The perceiver
The situation
The Target
FACTORS THAT AFFECT 'PERCEPTION'
THE PERCEIVER
THE PERCEIVER
CONDITION
THE TARGET
THE SITUATION
ATTITUDES
MOTIVES
INTEREST
EXPERIENCE
EXPECTATIONS
Physical appearance
Verbal communication
Non-verbal communication
Objects
TIME
WORK SETTING
SOCIAL SETTING

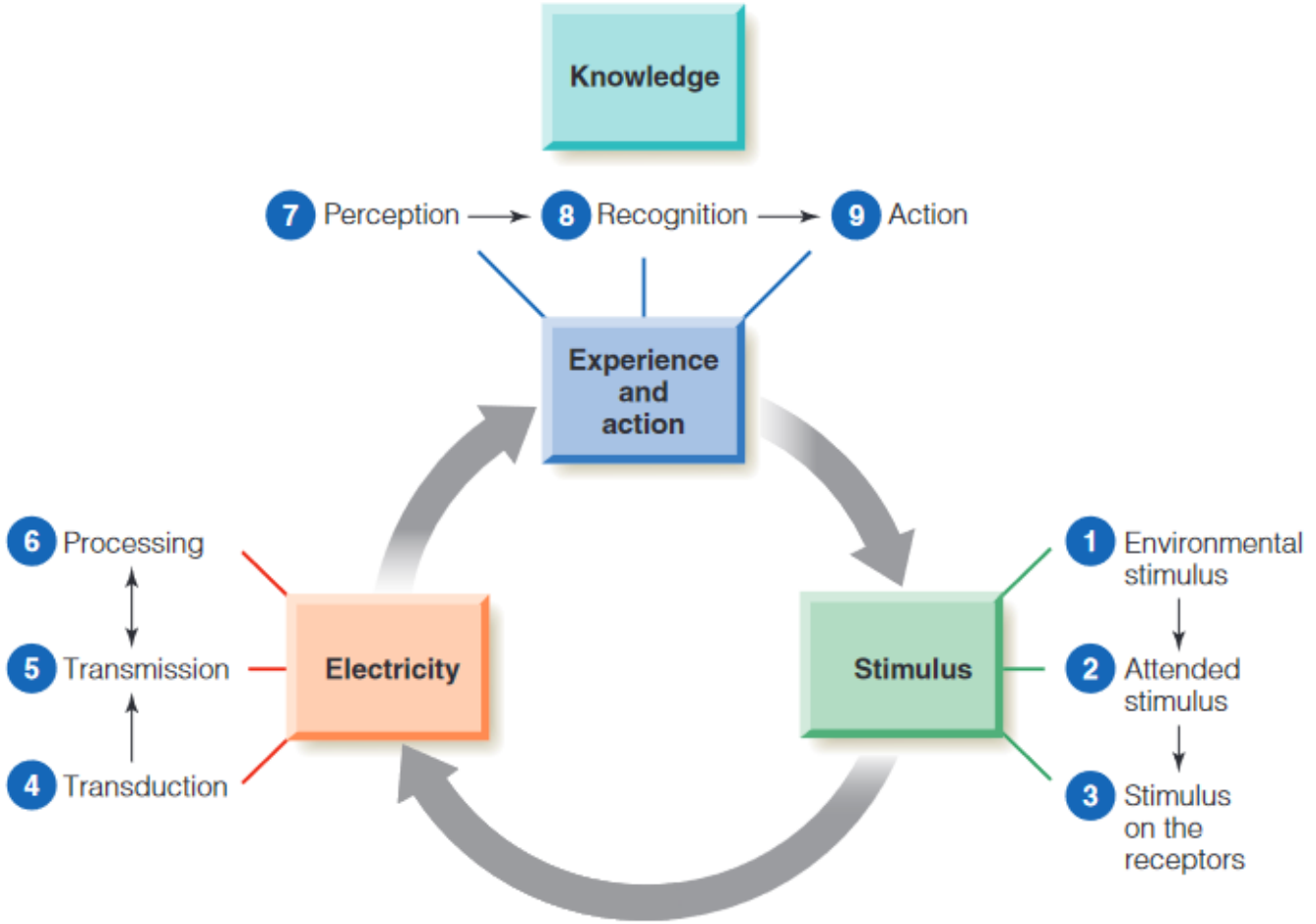
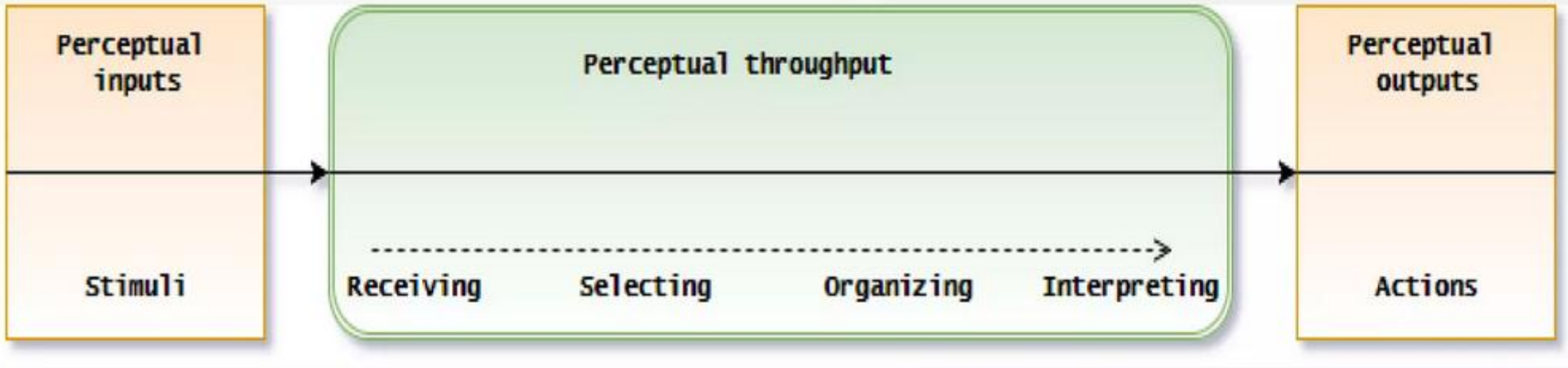


Figure 1.1 The perceptual process. The steps in this process are arranged in a circle to emphasize that the process is dynamic and continually changing. See text for descriptions of each step in the process.

PROCESS OF PERCEPTION



Perceptual Inputs : . Stimuli may be in the form of objects, events, or people. Thus everything in the setting where events occur, or which contributes to the occurrence of events, can be termed as perceptual input

Perceptual Mechanism: Perceptual mechanism involves three elements- selection of stimuli, organization of stimuli, and interpretation of stimuli.

Stimuli – Environmental stimuli, Attended Stimuli

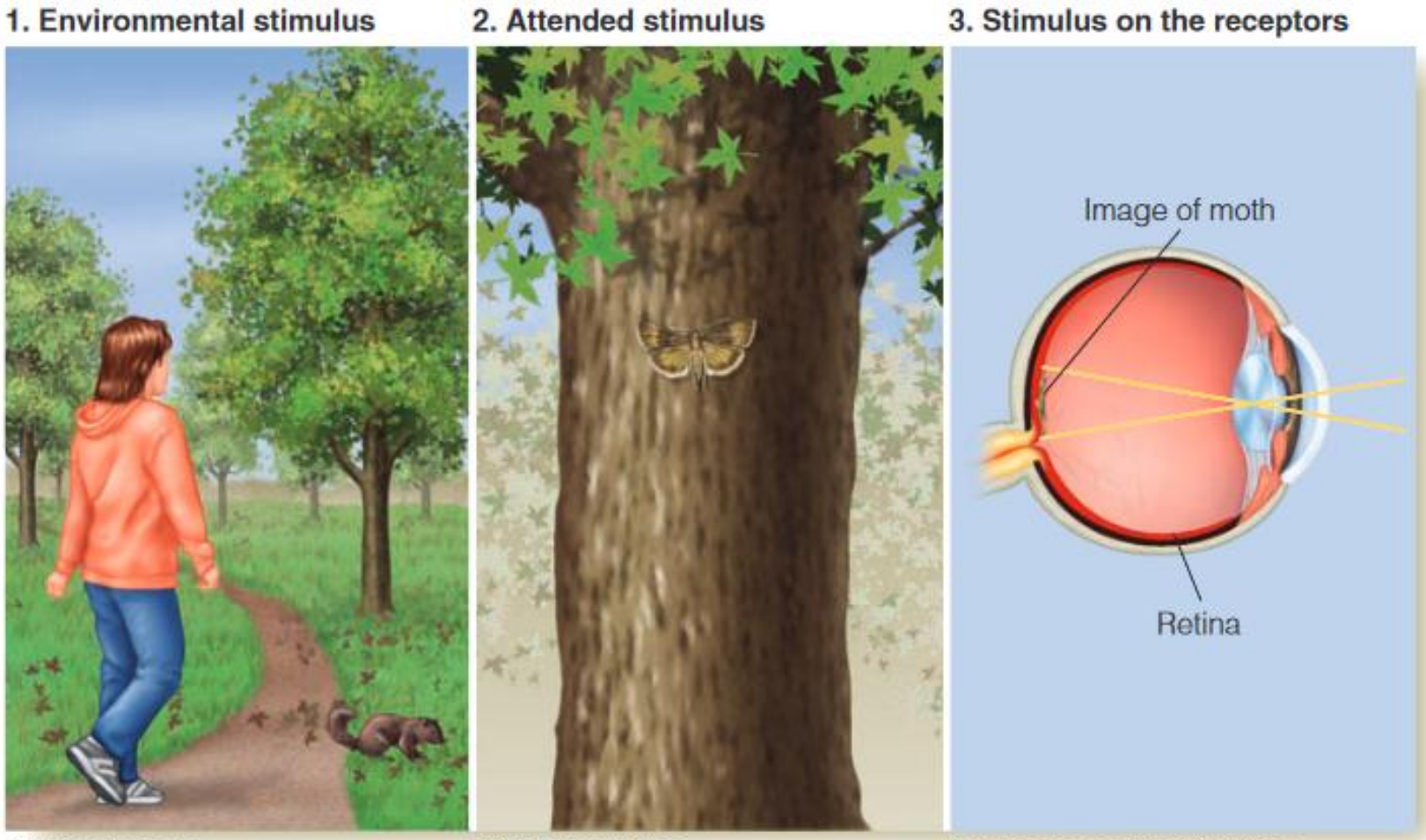


Figure 1.2 (a) We take the woods as the starting point for our description of the perceptual process. Everything in the woods is the environmental stimulus. (b) Ellen focuses on the moth, which becomes the attended stimulus. (c) An image of the moth is formed on Ellen's retina.

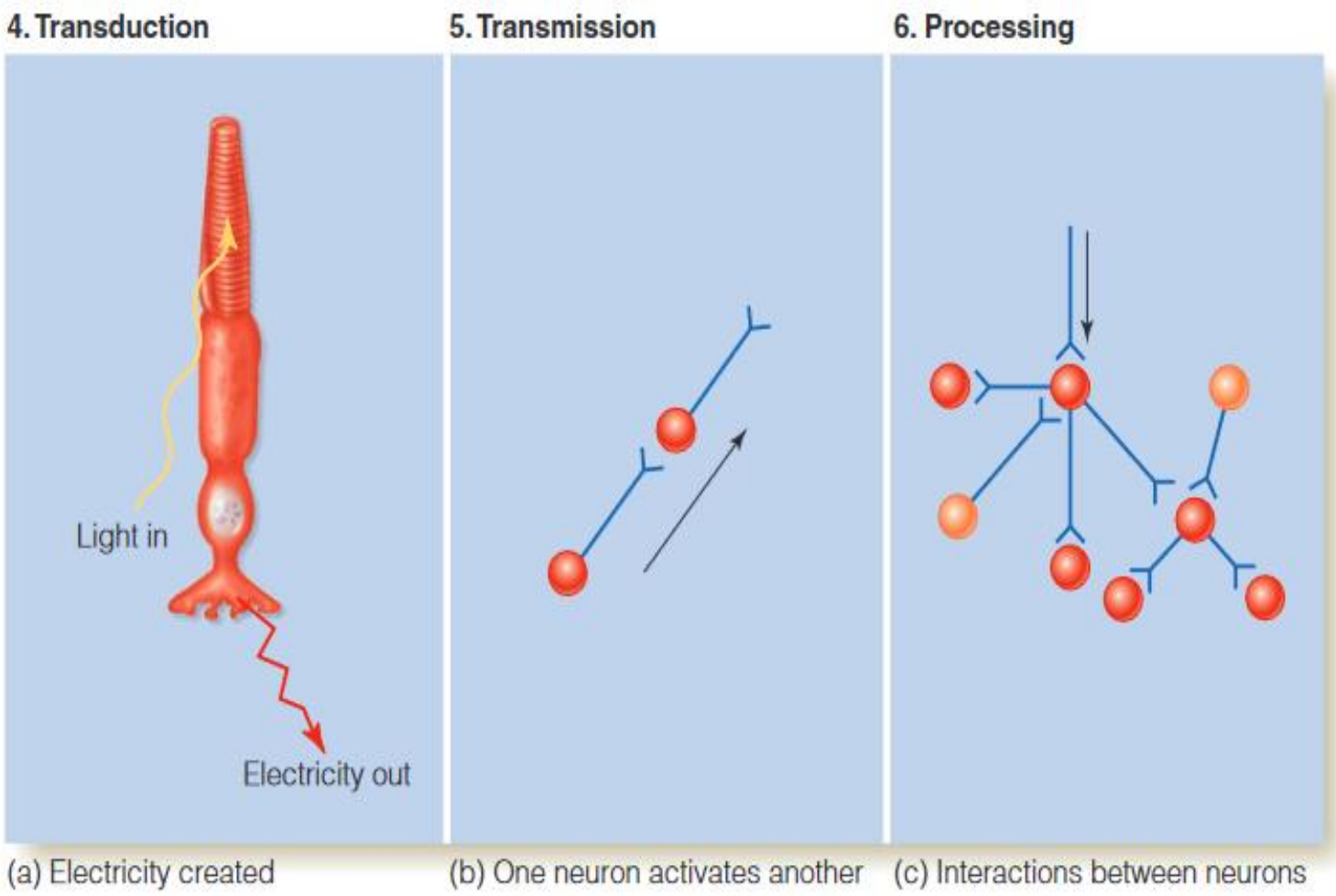
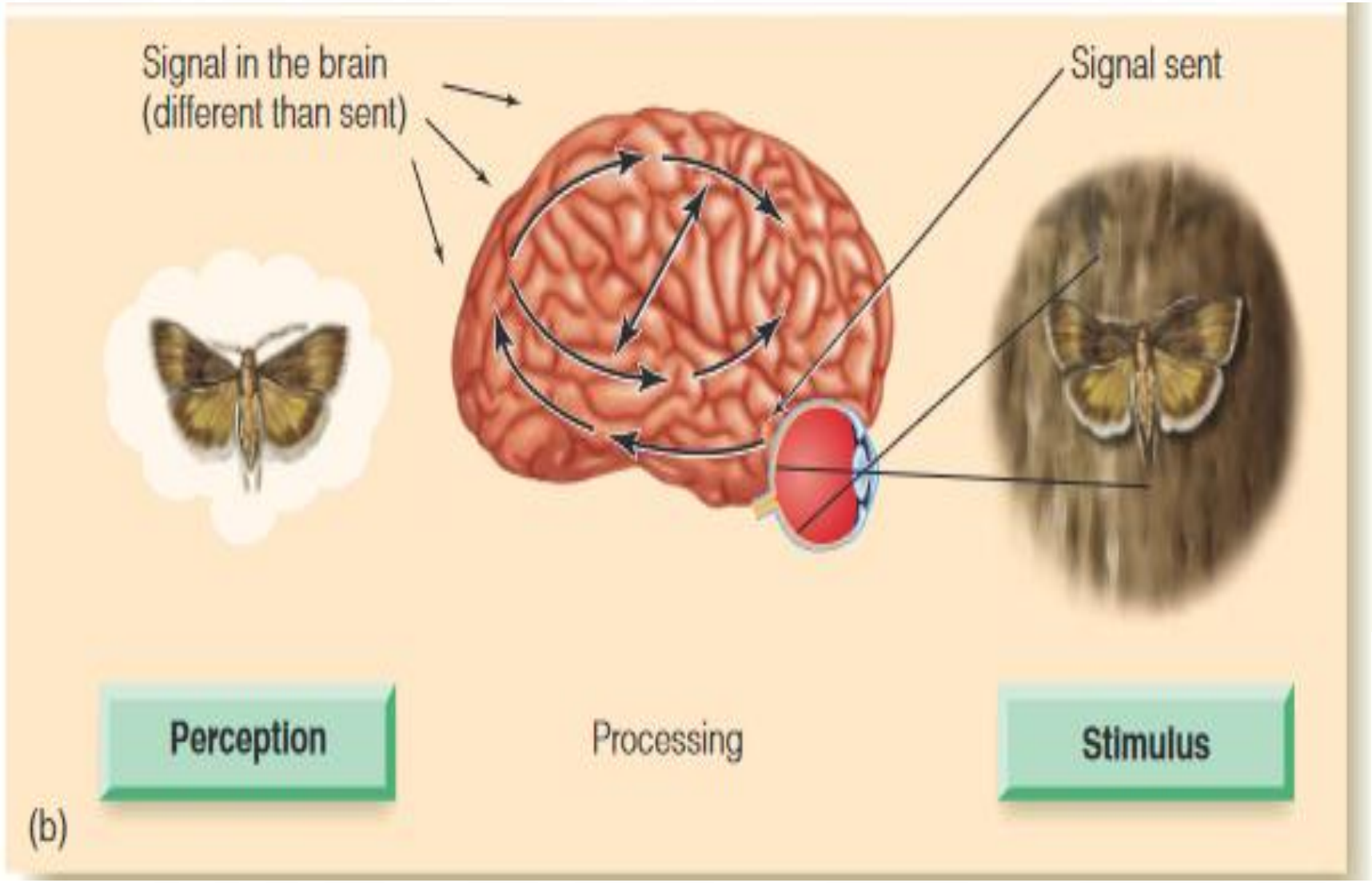
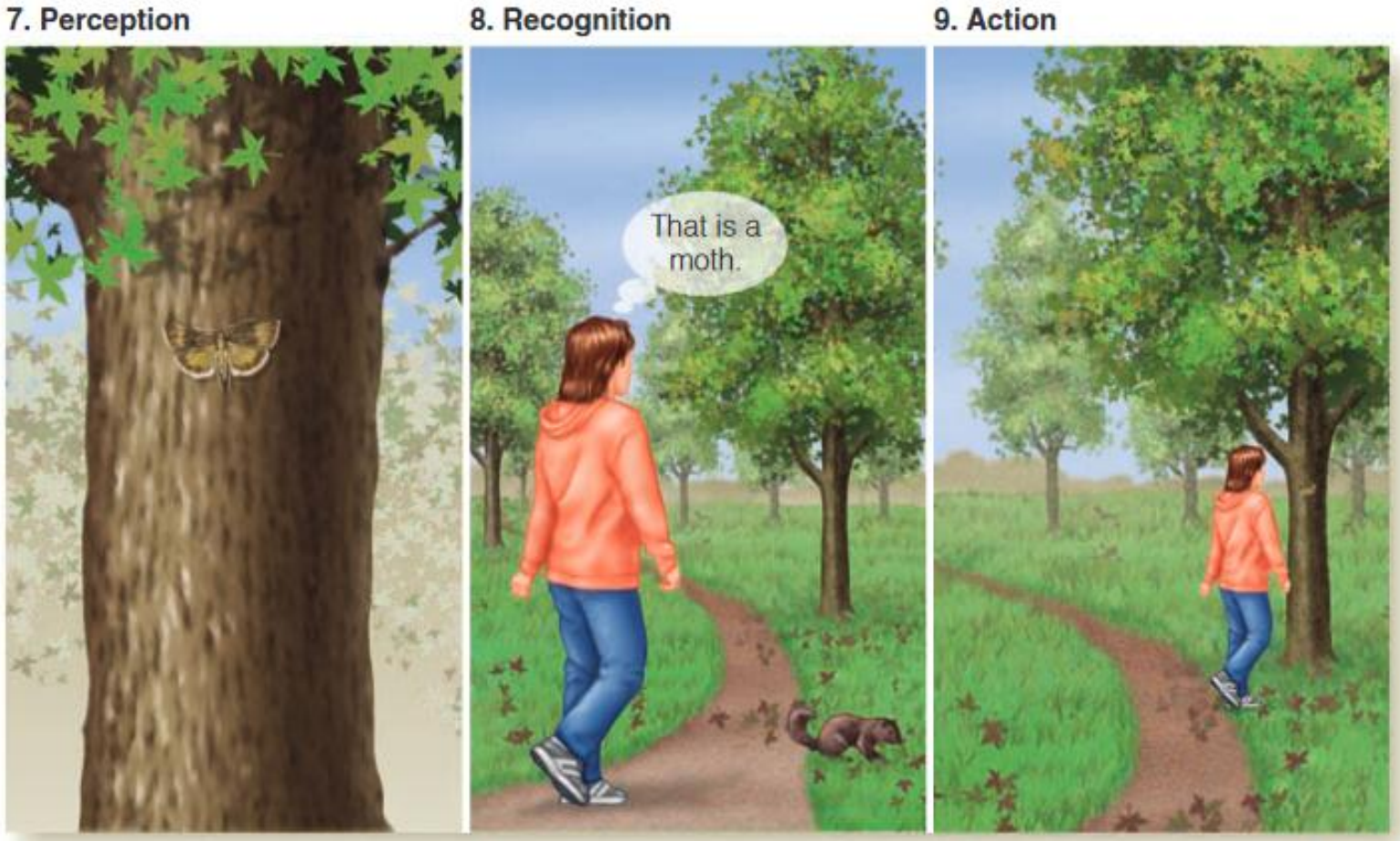


Figure 1.3 (a) *Transduction* occurs when the receptors create electrical energy in response to light. (b) *Transmission* occurs as one neuron activates the next one. (c) This electrical energy is *processed* through networks of neurons.



signal sent. (b) The nervous system sends electrical signals that stand for the moth. The nervous system processes these electrical signals, so the signal responsible for perceiving the moth is different from the original signal sent from the eye.



(a) Ellen perceives something on the tree.

(b) Ellen realizes it is a moth.

(c) Ellen walks toward the moth.

Figure 1.5 (a) Ellen has conscious perception of the moth. (b) She recognizes the moth. (c) She takes action by walking toward the tree to get a better view.

The Complexity of Perception

- Bottom-up processing
  - Perception may start with the senses
  - Incoming raw data
  - Energy registering on receptors
- Top-down processing
  - Perception may start with the brain
  - Person's knowledge, experience, expectations

Perception Is…

- The process of recognizing, organizing, and interpreting information from senses
- Not an exact copy of “the world”
- Based on our past experience and expectations

Conditions of perception

- Intensity
- Novelty
- Repetition
- Intention
- motivation

Prerequisites of perception

- Things felt by the senses
- Things relating to prior knowledge and past experiences
- Functioning of the brain
- Response of the individual

Perceptual Organization

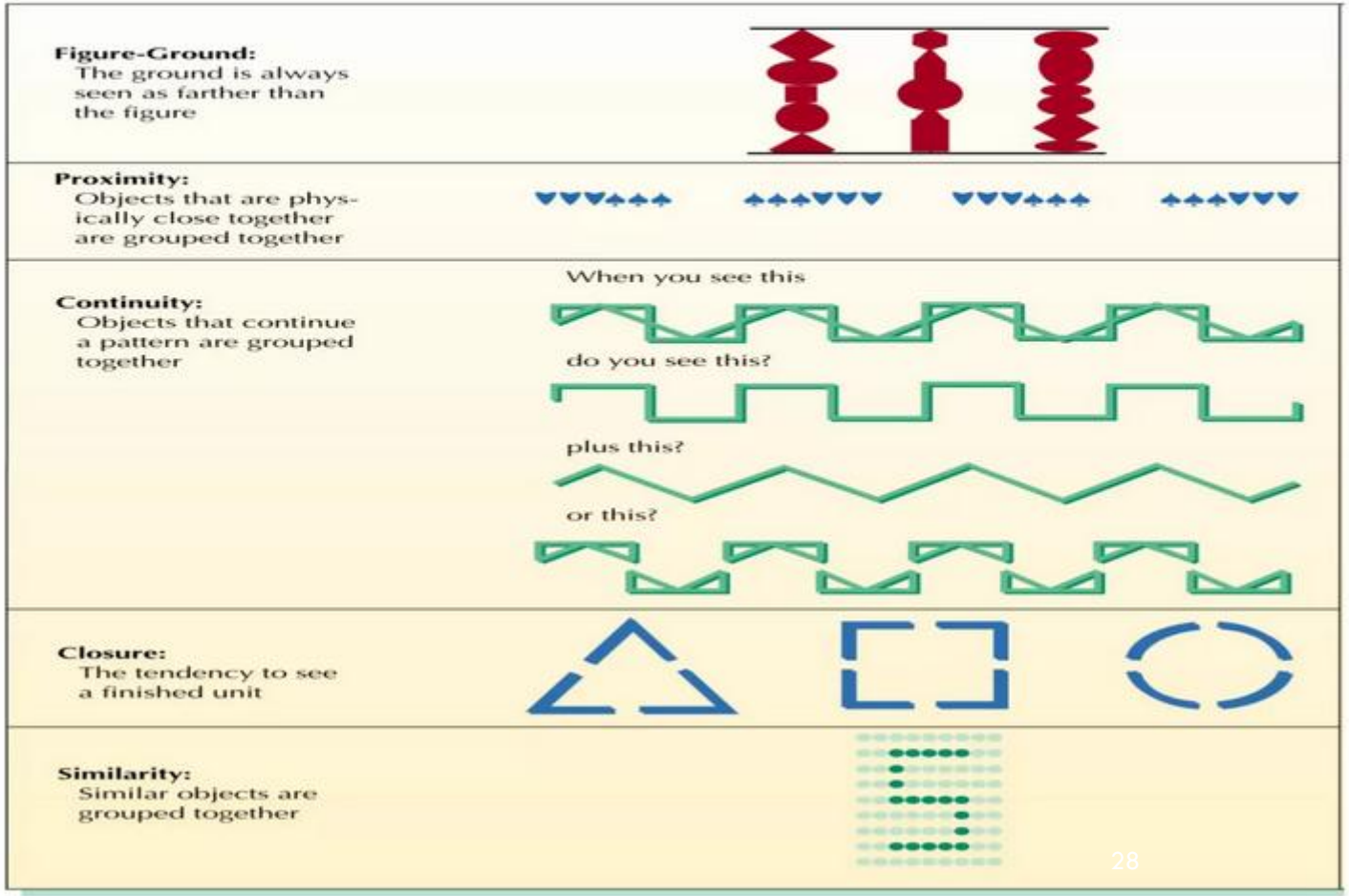
- "Old" view – structuralism
  - Perception involves adding up sensations
- "New" view – Gestalt psychologists
  - The mind groups patterns according to laws of perceptual organization


ONE VASE OR TWO FACES?
Study.com

FIGURE AND GROUND: "WHAT STANDS OUT?"

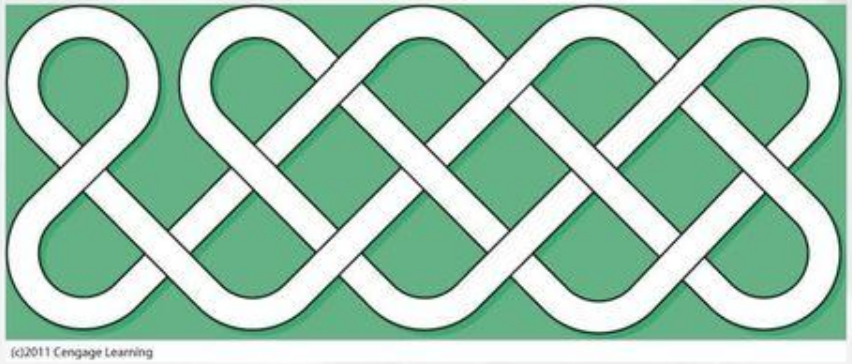
- We tend to see things in a figure and ground
  - FIGURE: refers to the object being perceived
  - GROUND: refers to the background

GESTALT ORGANIZATIONAL PRINCIPLES



Gestalt Laws of Perceptual Organization

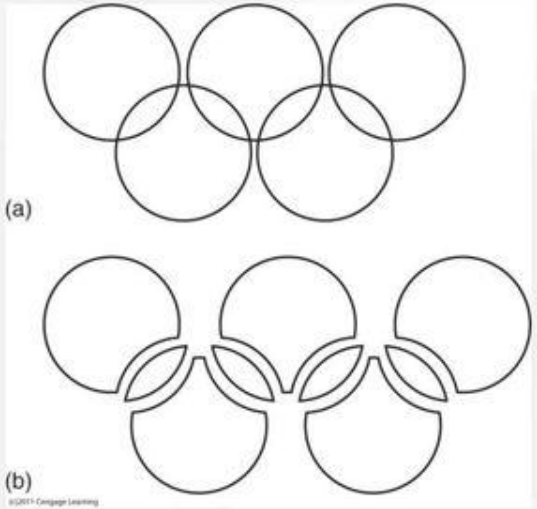
- Law of good continuation
  - Lines tend to be seen as following the smoothest path



Caption: We perceive this pattern as continuous interwoven strands because of good continuation.

Gestalt Laws of Perceptual Organization

- Law of good figure (simplicity or prägnanz)
  - Every stimulus pattern is seen so the resulting structure is as simple as possible



Caption: Law of simplicity. We see five circles, as in (a), not the more complex array of nine objects, as in (b).

Gestalt Laws of Perceptual Organization

- Law of familiarity
  - Things are more likely to form groups if the groups appear familiar or meaningful

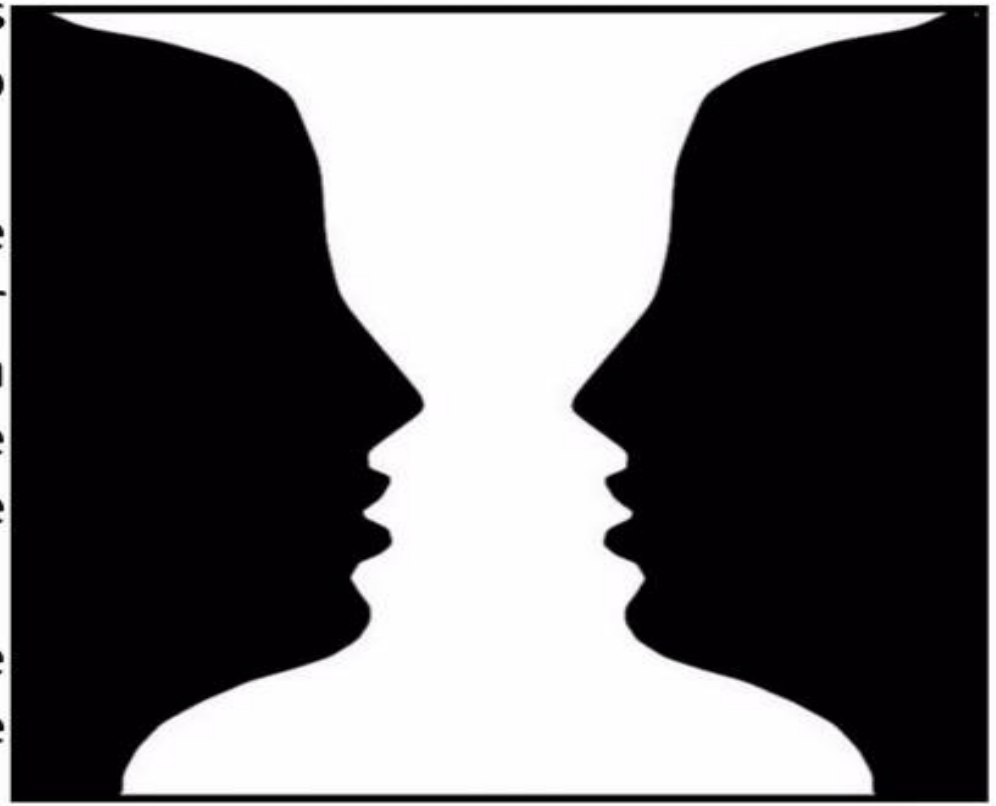
Caption: *The Forest Has Eyes by Bev Doolittle (1985). Can you find 13 faces in this* picture? (Source: "The Forest Has Eyes" 1984 Bev Doolittle, courtesy of The Greenwich Workshop, Inc.)

Principles of perception

1. The principle of figure –ground relationship.
2. Principle of closure
3. Principle of grouping.
4. Principle of simplicity
5. Law of Pragnanz.
6. Principle of contour.
7. Principle of Context.
8. Principle contrast.
9. Principle of distance and depth.
10. Principle of motion.

The principle of figure –ground relationship.

- A figure is always perceived in relationship to its background.
- We experience a figure against a background or background against a figure based upon the characteristics of the perceiver.
- The given pattern may be perceived either as a vase or as two faces.



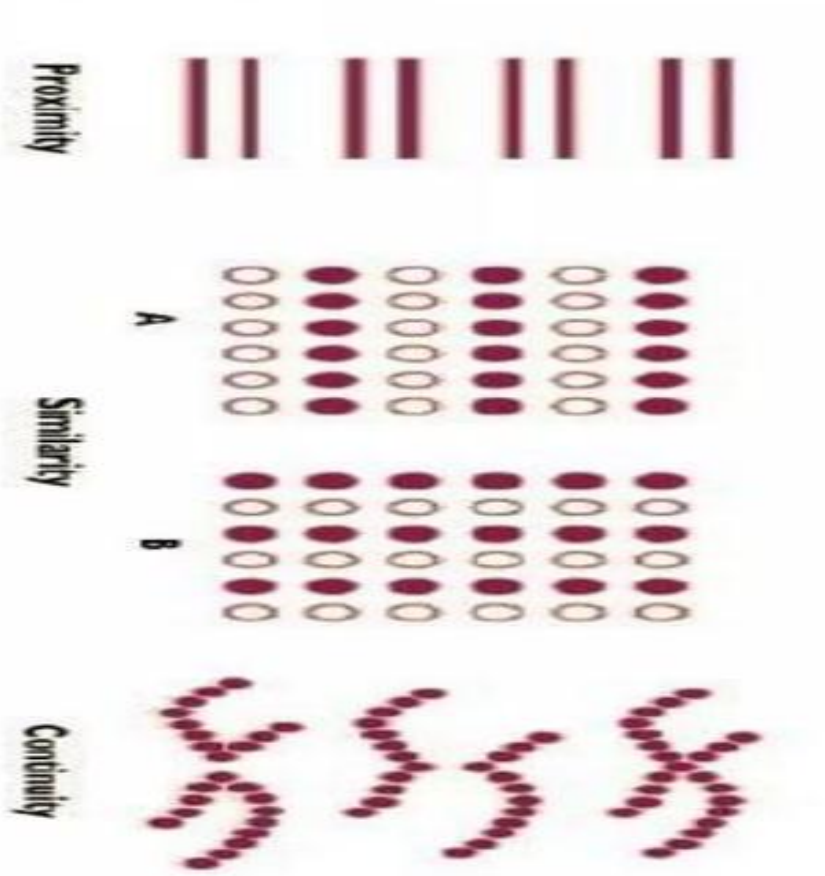
The principle of closure

- While confronting an incomplete pattern one tends to complete the pattern or sensory gaps and perceive it as meaningful whole.
- This is helpful in interpreting various incomplete objects or patterns in the environment.
- Though the Panda is not complete still we recognize it as a Panda.

The principle of grouping

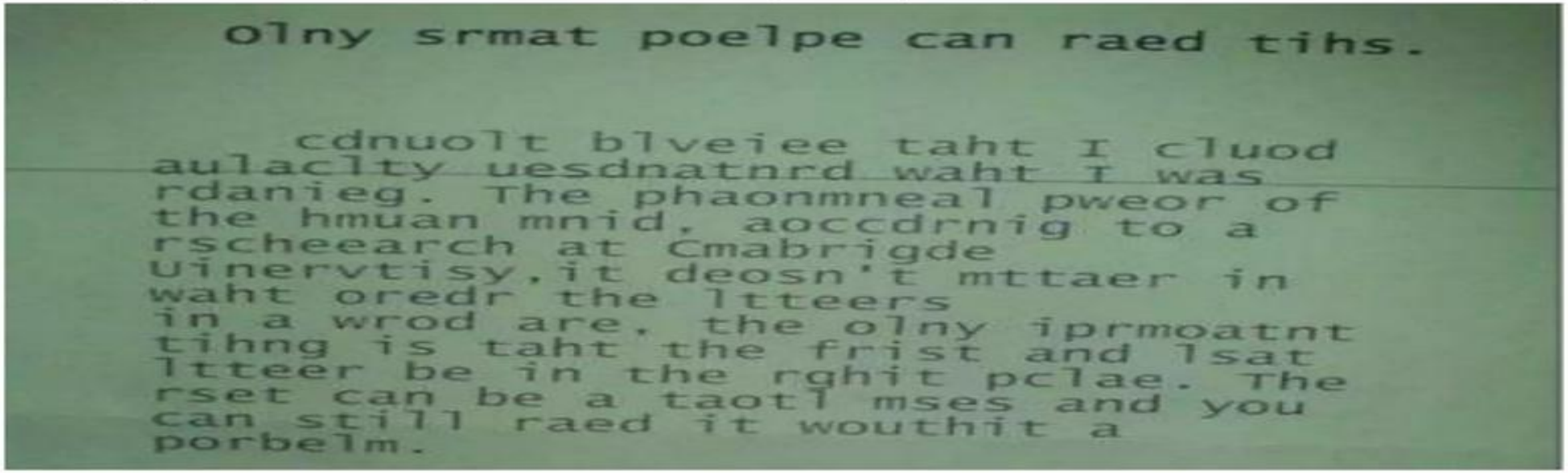
- It is a tendency to perceive a stimuli in organised meaningful patterns. It may be based on

1. Similarity: objects look alike are grouped together. (group of dots)
2. Proximity: objects that appear close are grouped together. (8 lines)
3. Continuity: Grouped based on the continuation.



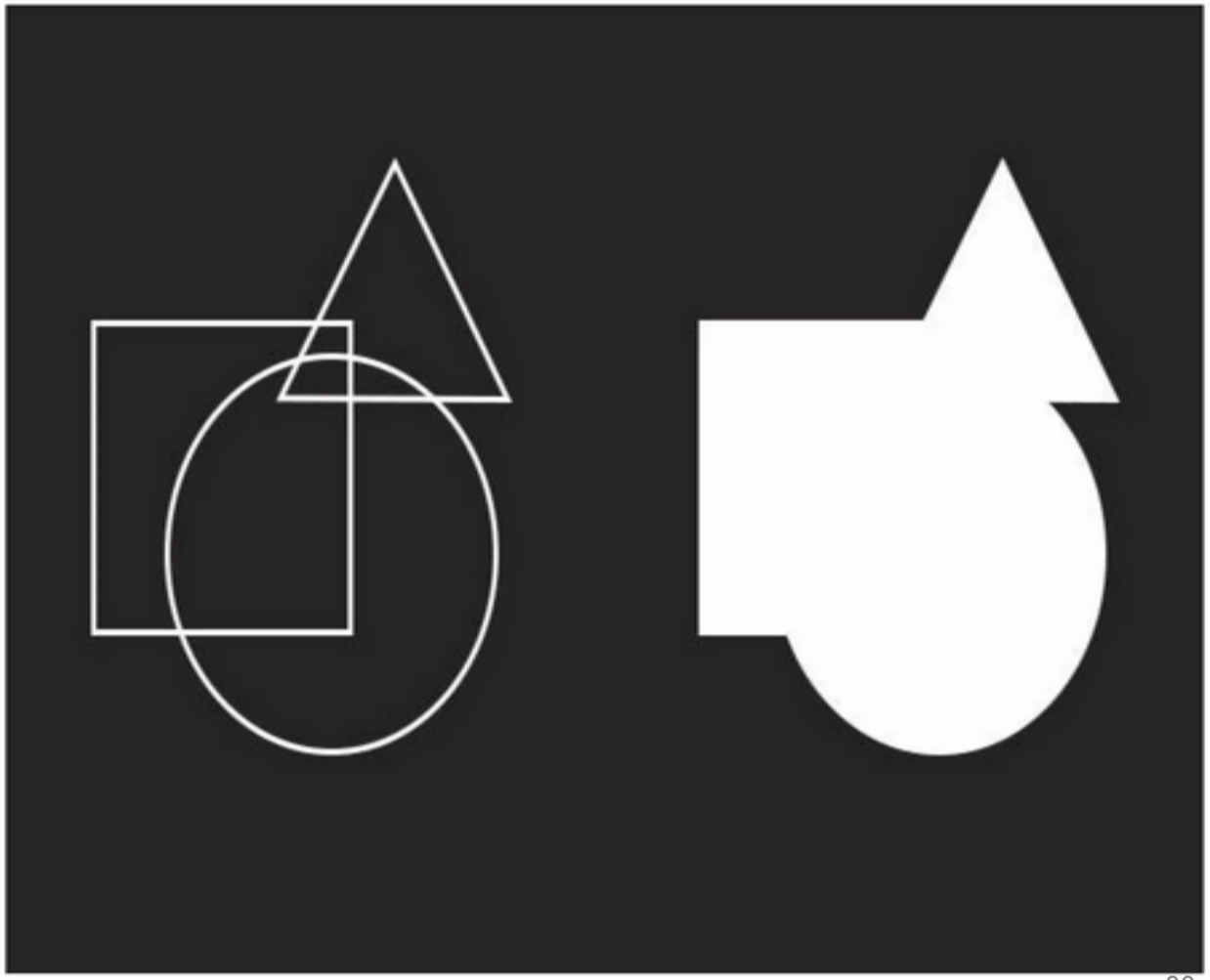
The principle of simplicity

- We tend to perceive a stimulus in such a way that in the simplest possible pattern.
- The characteristics like symmetry, unbroken lines and compact areas and the perceivers familiarity with the figure contribute to its simplicity.



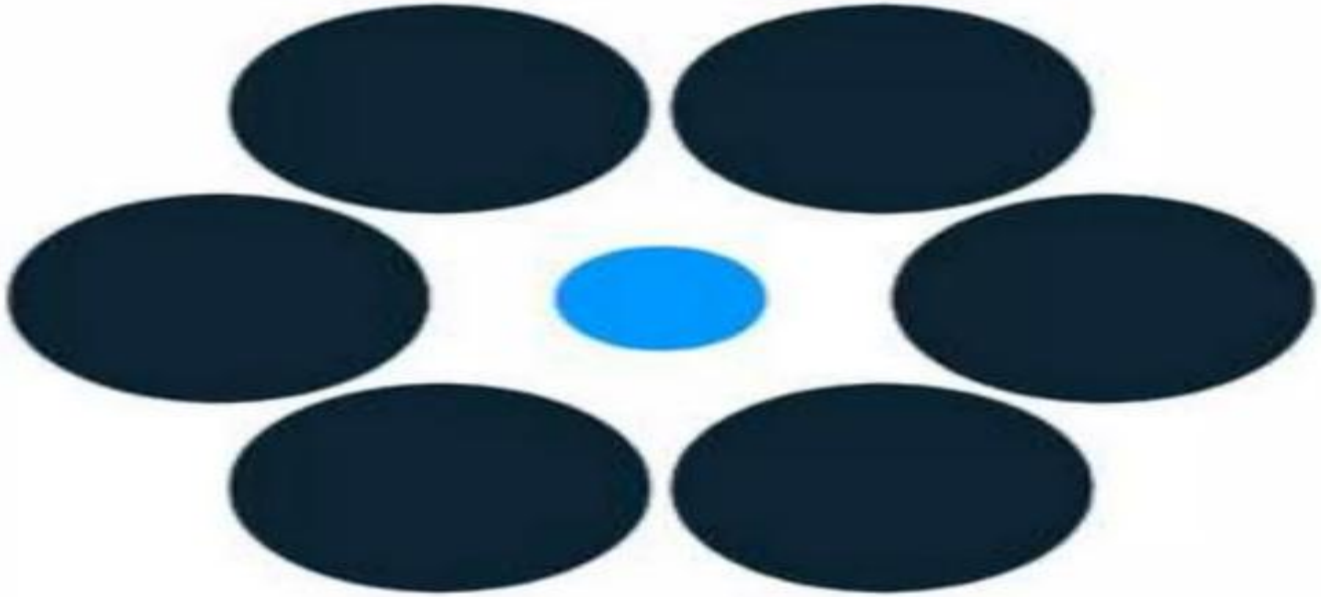
The law of Pragnanz

- We perceive a figure in its good and proper form instead of the incomplete ,imperfect, ugly or broken ones.
- It is also similar to principle of simplicity.
- The given figure appears as overlapping square, triangle and circle.



- **Principle of contour**We perceive a figure in its contour an it is the boundary between a figure and background. We can perceive different figures and sketches with their appearance, sizes and colours only when they have been marked separate. In the given we cannot separate the margin of colours as they lack contour.

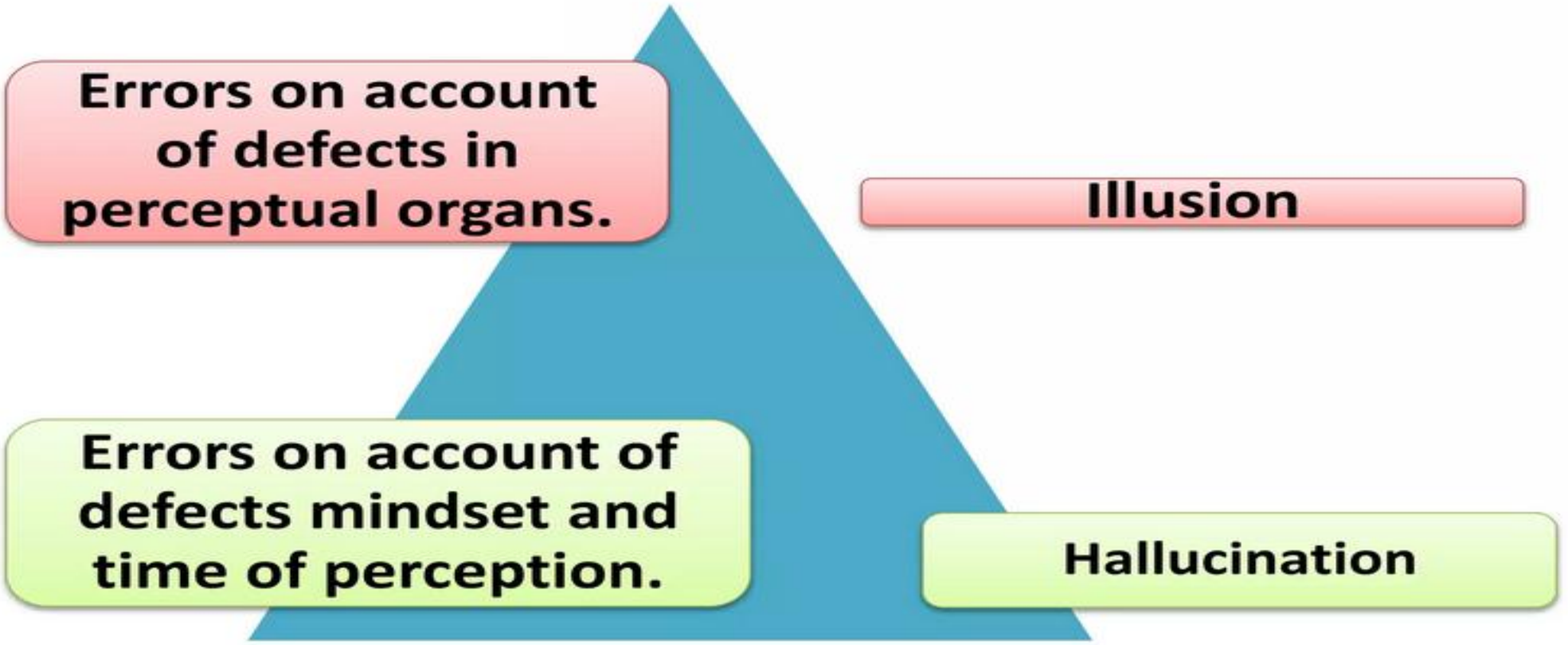
- **Principle of Contrast:** We perceive a figure larger or brighter in relation to its background. In the given picture the the blue dot is brighter compare to the background. In the first picture the blue dot appears larger to background and vice versa in second picture.



- **Principle of context:** **a rain may be perceived by farmer as blessing and hell for a tourist.**
- **Principle of distance and depth:** **Throgh this principle we are able to see the distance of an object based on its size. Also we can measure the depth of something based on the perception. Even an infant has this ability.**
- **Principle of Motion.** There is movement around all of us. Motion perception is based on change of position and comparison against background.

Eg. Hills don't move but nearby trees move during a travel.

Errors in Perception



Perceptual errors

1. Illusion: these are faulty perceptions. Eg. Looking horizon as the meeting place of sky and earth.
2. Hallucination: perception of stimulus in the absence of the stimuli. It may a sound, smell, vision, taste, touch. This is one of the marking feature of psychosis.

Perception and Action: *What* and *Where*

- What stream: identifying an object
- Where stream: identifying the object's location


Thank
You!