

Sensation and Perception

Dinh Tien Minh



<https://dinhtienminh.net/>



dinhtienminh@ueh.edu.vn





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Sensation

Cảm giác



Sensation

Sensation is the detection of **stimuli**. Our eyes, ears, and other sensory organs are packed with **receptors**.
(James W. Kalat, 2022)

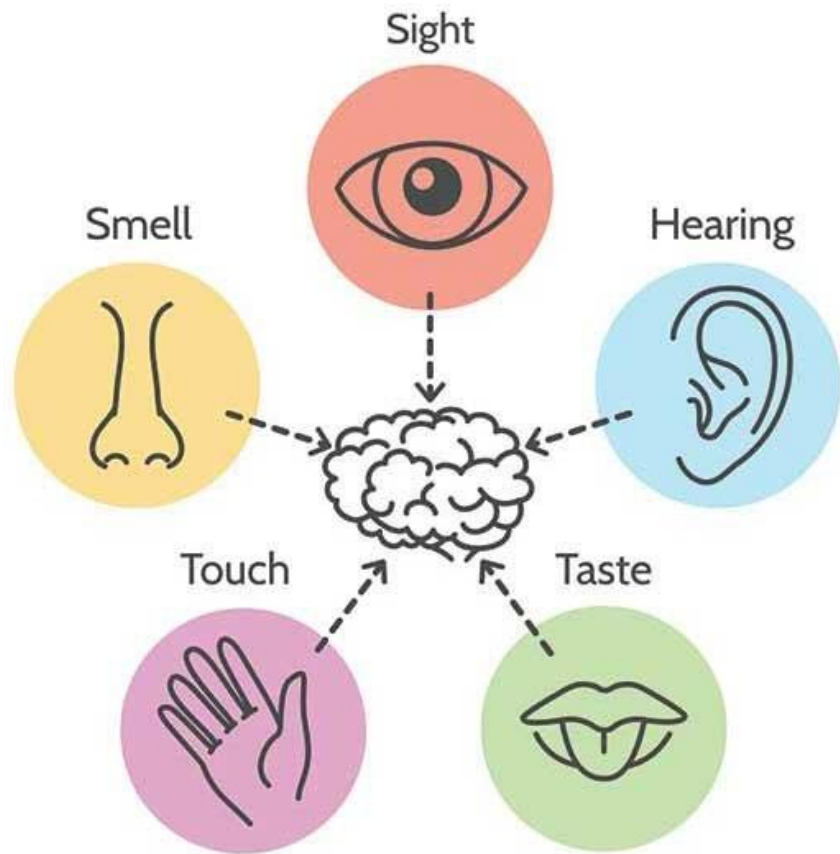
Stimuli

Energies from the world around us that affects us in some way.

Receptors

Specialized cells that convert environmental energies into signals for the nervous system.

Five Human Senses



The Functional Areas of the Brain

01 The Visual area

02 Auditory area

03 Olfactory area

04 Taste area

05 Emotional area

06 Language writing area

07 Language speaking area

08 Speech understanding area

09 Speech understanding area

.....

Interpreting Sensory Information

Absolute threshold

- The weakest sounds, lights, and touches that people could detect

Difference threshold

- The smallest difference that people could detect between one stimulus and another.
- The difference threshold = the just noticeable difference (JND)

Weber's law

- The JND is a constant fraction of the original stimulus.

Sensory Thresholds and Signal Detection

Absolute sensory threshold

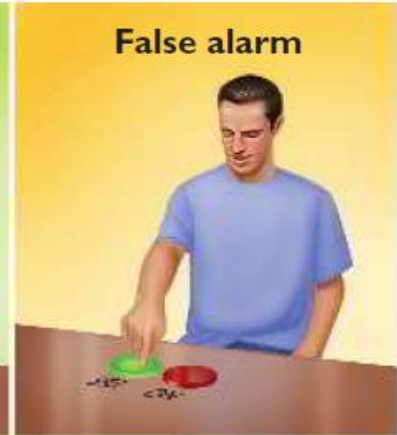
- Intensity at which a stimulus is detected 50 percent of the time.
- When trying to detect stimuli, you are correct when reporting the presence of a stimulus, or its absence.
- Wrong when failing to detect stimulus, or reporting its presence when it is absent

Signal Detection Theory

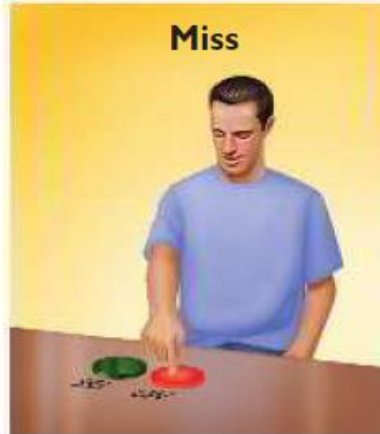
- Study of people's tendency to make hits, correct rejections, misses and false alarms.
- Response depends on willingness to risk misses or false alarms.
- When trying to detect an item, more likely to overlook if it occurs rarely.

Absolute sensory threshold

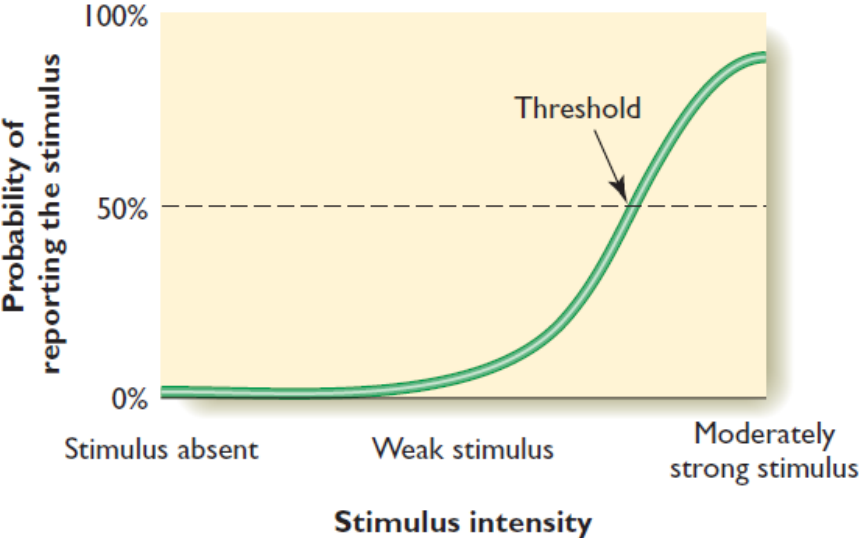
Report stimulus present



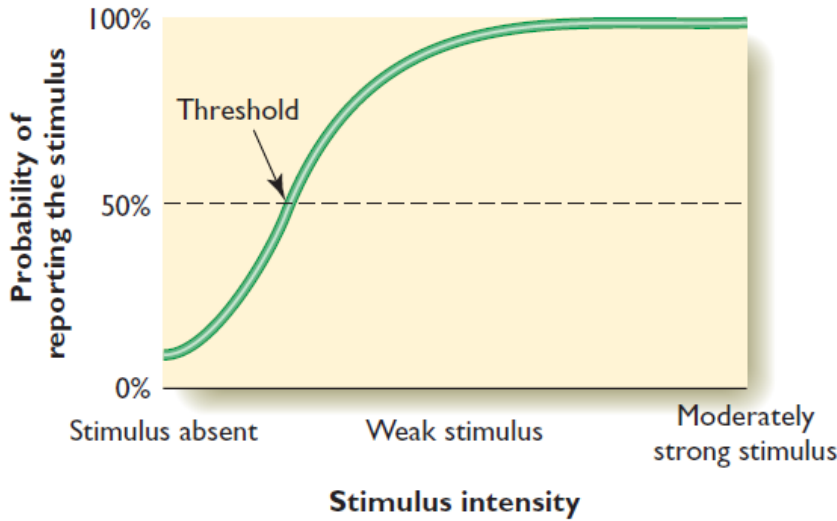
Report stimulus absent



Signal Detection Theory



A



B

2

Perception

Tri giác/Nhận thức



Perception

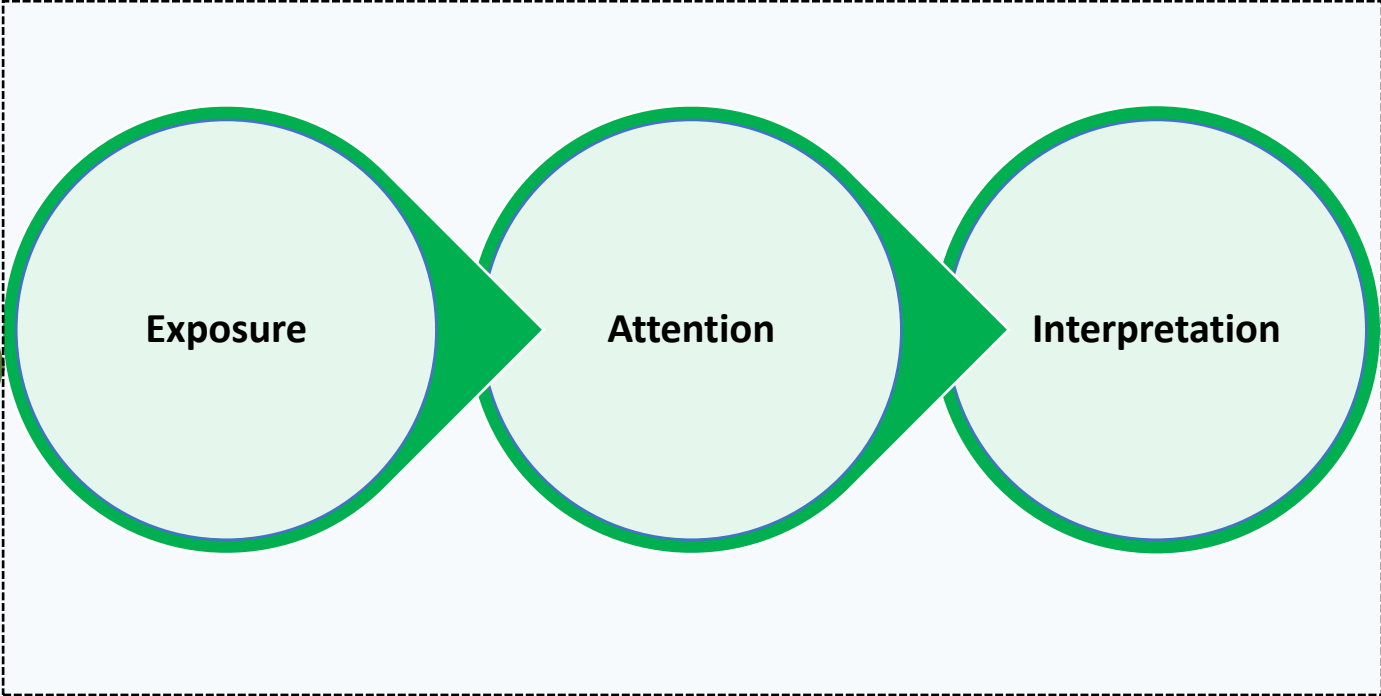
Perception is the process of receiving and interpreting sensory information.

Perception is a psychological process that fully reflects the superficial properties of objects and phenomena that directly impact our senses.

Perception Process

- Sight (Eyes)
- Sound (Ears)
- Smell (Nose)
- Taste (Mouth)
- Touch (Skin)

Senses
(Stimuli inputs)



Perception Process

Gestalt Psychology (Structural Psychology)

Gestalt psychology emphasizes perception of overall patterns.

Bottom-up process

Perceptual activity in which tiny elements combine to produce larger items.

Reversible figures

Can be perceived in more than one way.



Top-down process

Applying experience and expectations to interpret each item in context.

Figure and ground

You distinguish the object from the background

Gestalt Psychology (Structural Psychology)

Gestalt principles:

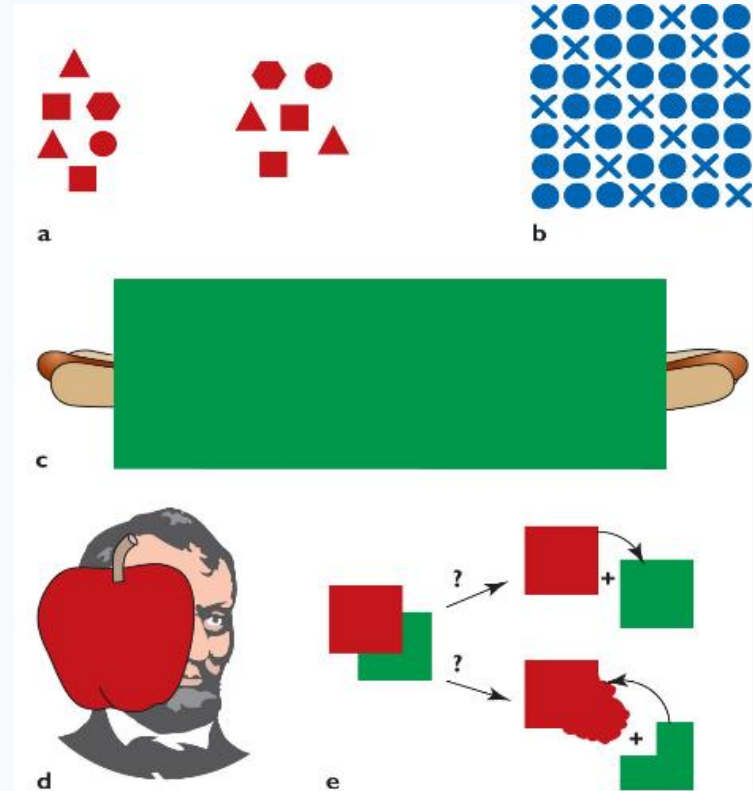
Proximity (Tính lân cận)

Similarity (Tính tương đồng)

Continuation (Tính liên tục)

Closure (Tính kết nối/khép kín)

Good figure (Cấu hình tốt)



Sensation

The process of individuals detecting information from the external environment through the senses; Sensory organs respond to various environmental stimuli

The brain's initial response to a stimulus.

Involves the detection of physical stimuli.

Bottom-up process: sensory organs detect and transmit information to the brain.

Perception

The psychological process of interpreting and organizing sensory information into conscious experiences.

Occurs through organization, interpretation, and experience conscious of sensory information.

How we interpret stimuli to understand our world.

Top-down process: Expectations and prior knowledge guide our interpretation of sensory information.

Thanks

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