



HS 002: Introduction to Psychology

Manish Kumar Asthana (Ph.D.)

Assistant Professor

Department of Humanities & Social Sciences

Email: asthanamfhs@iitr.ac.in

Lecture 6: 05.09.2019



What do you see?



Sensation: a process by which our sensory receptors and nervous system receive and represent stimulus energy.



Sensation vs. Perception

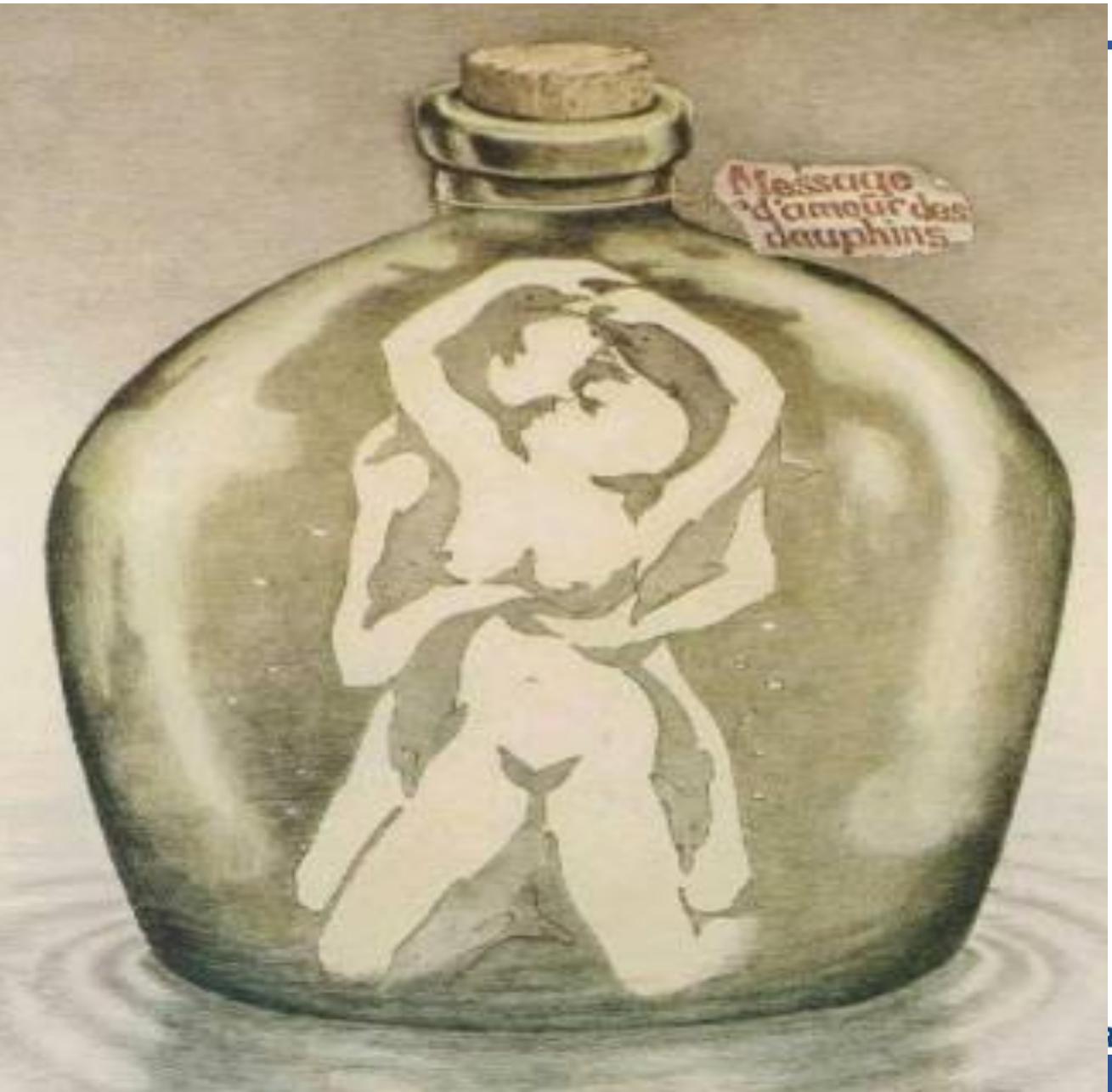
Sensation : *The process by which our sensory receptors and nervous system receive and represent stimulus energies from our environment.*

The brain receives input from the sensory organs

Perception : *The process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events.*

The brain makes sense out of the input from sensory organs

What do you see?



What am I seeing?

Bottom-Up Processing
analysis that begins with the
sense receptors and works
up to the brain's integration
of sensory information

Top-Down Processing
using models, ideas, and
expectations to interpret
sensory information

Is that something I've
seen before?



Process of Sensation : From Sensory organs to the Brain

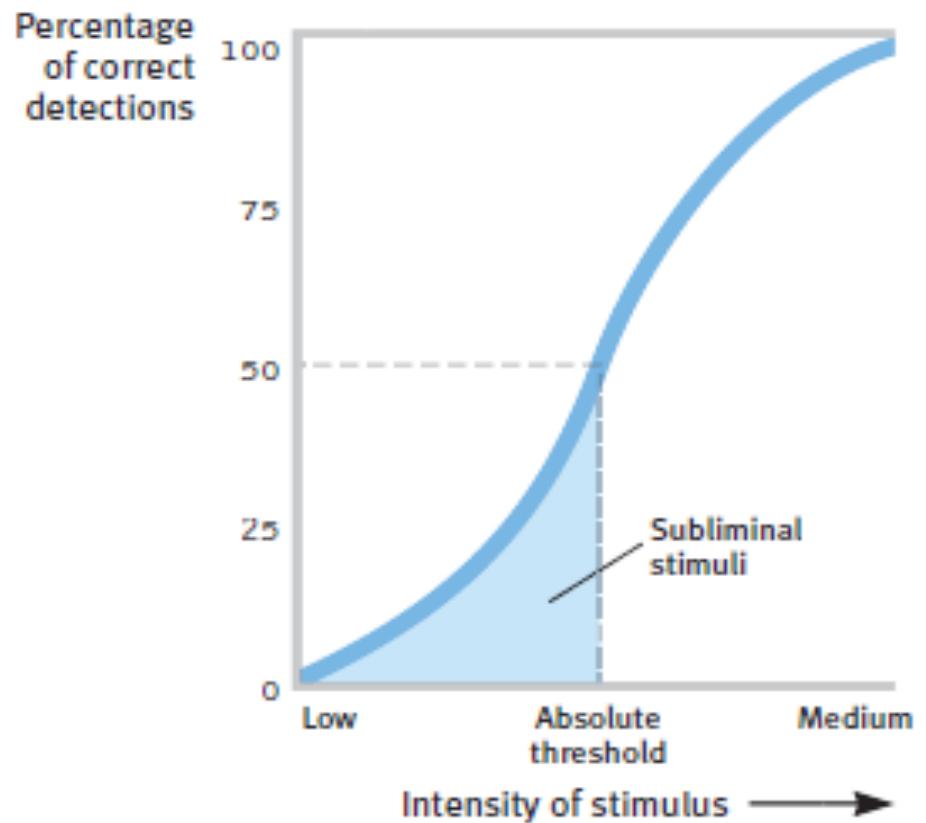
Reception--
the stimulation
of sensory
receptor cells by
energy (sound,
light, heat, etc)

Transduction--
*transforming
this cell
stimulation into
neural impulses*

Transmission--
delivering this
neural
information to
the brain to be
processed

Thresholds

The **absolute threshold** refers to the minimum level of stimulus intensity needed to detect a stimulus half the time.



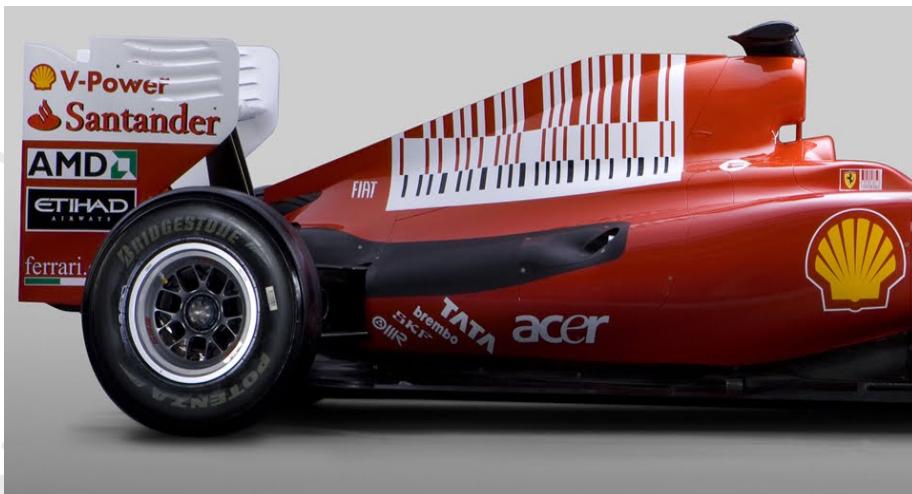
Difference Threshold: Smallest amount by which a stimulus can be changed and the difference be detected (also called just noticeable difference – JND)



(i) Homeostasis, (ii) motivation factors such as rewards and costs

Subliminal Detection

- *Subliminal: Below our threshold for being able to consciously detect a stimulus*
- Although we cannot learn complex knowledge from subliminal stimuli, we can be **primed**, and this will affect our subsequent choices.





Signal Detection Theory

- ***When Absolute Thresholds are not Absolute***
- ***Signal detection theory refers to whether or not we detect a stimulus, especially amidst background noise.***
- This depends not just on intensity of the stimulus but on psychological factors such as the person's experience, expectations, motivations, and alertness.

Factors affecting absolute threshold:

1. ***Repetition***
2. ***Fatigue***
3. ***Competing stimuli***
4. ***Expectation***



HS 002: Introduction to Psychology

Manish Kumar Asthana (Ph.D.)

Assistant Professor

Department of Humanities & Social Sciences

Email: asthanamfhs@iitr.ac.in

Lecture 7: 07.09.2019

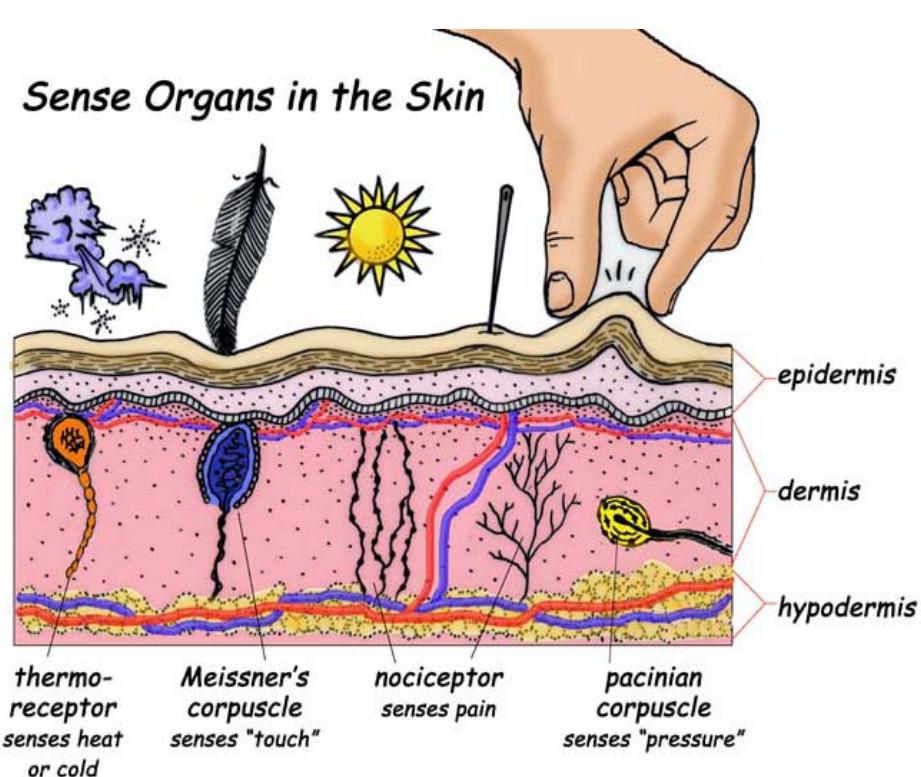


- Row 1: What is Psychology?
- Row 2: Types of Defense Mechanism?
- Row 3: Define structure of Personality by Carl Jung?
- Row 4: What is Personality?
- Row 5: Types of Archetype?

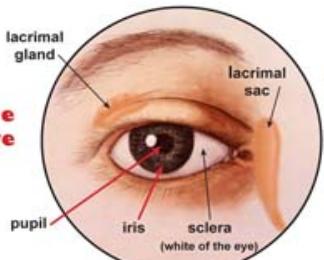
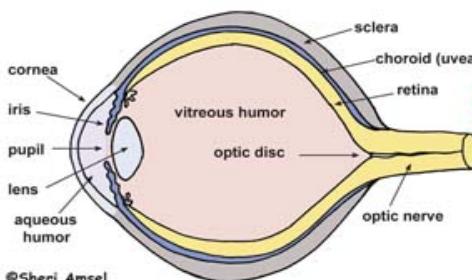
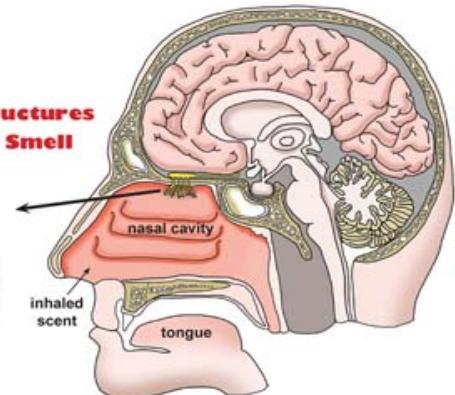
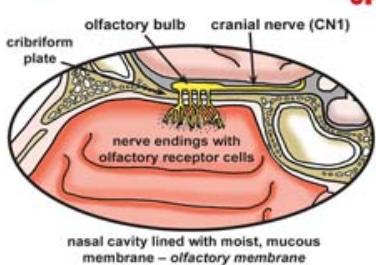
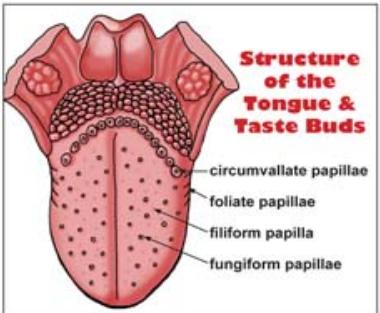
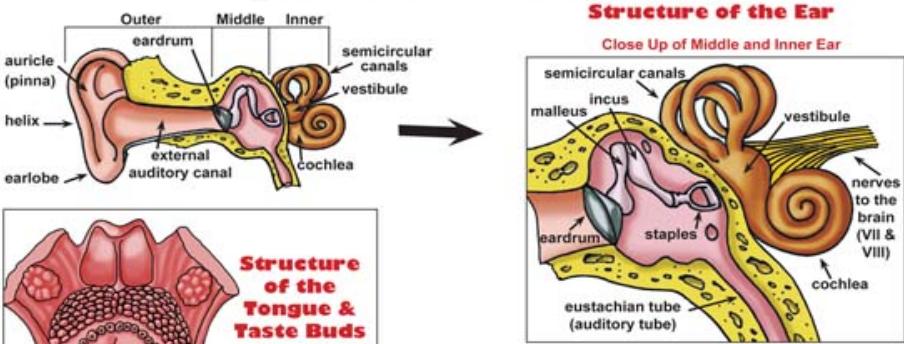


- 1.Types of Processes in Sensation?
- 2.Process of sensation?
- 3.Absolute Threshold?
- 4.Difference Threshold?
- 5.Subliminal Threshold?
- 6.Signal Detection Theory?

5-Basic Senses



©Sheri Amsel • www.exploringnature.org



www.exploringnature.org

- Vision (sight), Olfaction (Smell), gustation (Taste), audition (Hearing), tactition (touch)
- Some other senses are:

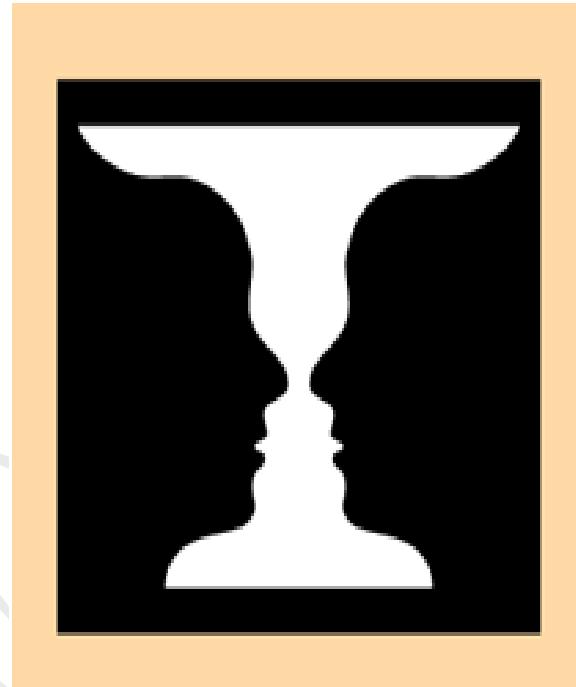


Perception: *The process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events.*



Gestalt principles of perceptual organization

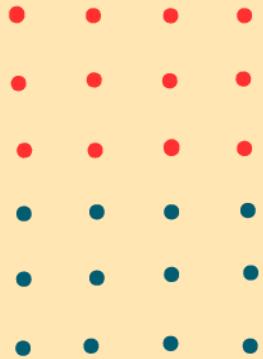
1. Figure-ground: Organization depends on what we see as figure (object) and what we perceive a ground (context).
2. Similarity: Objects that have similar characteristics are perceived as unit.
3. Proximity: Objects close together in space or time perceived as belonging together.
4. Continuity: We tend to perceive figures or objects as belonging together if they appear to form a continuous pattern.
5. Closure: We perceive figures with gaps in them to be complete.



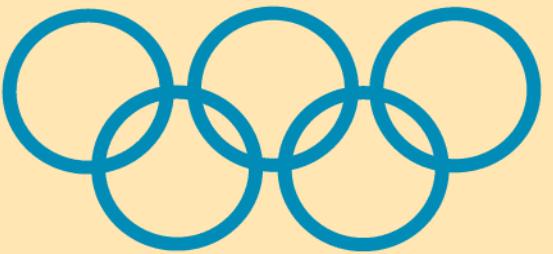


Laws of Perceptual Groupings

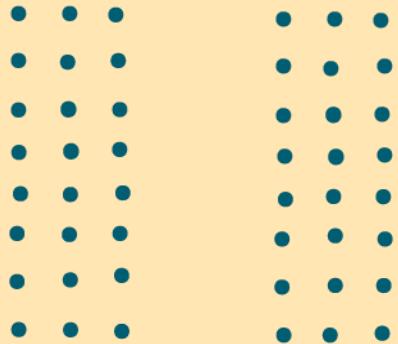
Examples of the Gestalt Laws



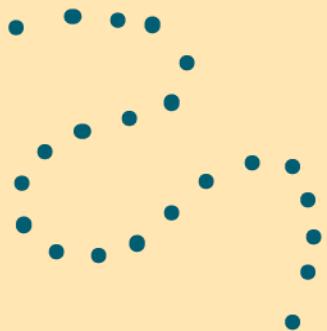
Law of Similarity



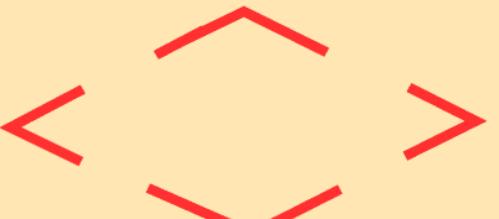
**Law of Pragnanz or the
Law of Good Figure**



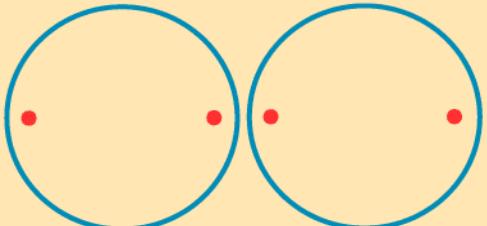
Law of Proximity



Law of Continuity



Law of Closure



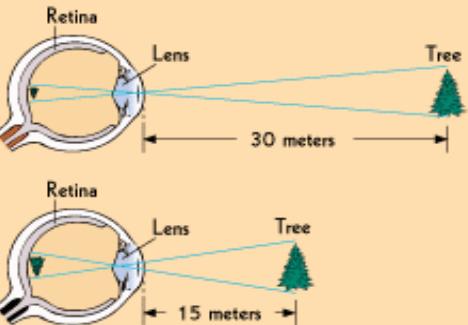
The Law of Common Region

Perceptual Constancies

The tendency to perceive objects as maintaining stable properties (e.g., size, shape, brightness, and color) despite differences in distance, viewing angle, and lighting. [Size & Shape Constancy]

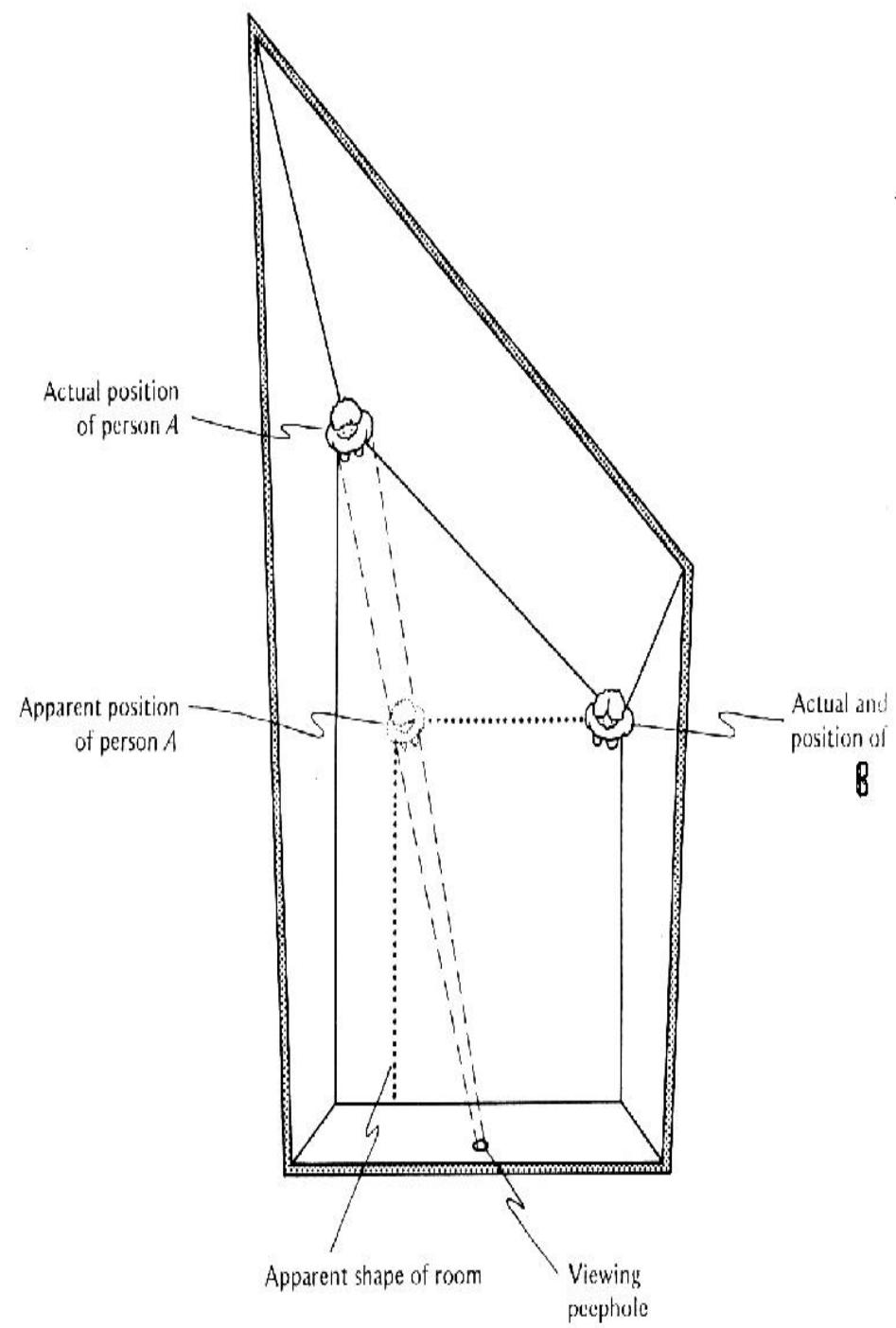
► Perceptual Constancies

SIZE CONSTANCY: The size of the image on the retina gets larger or smaller as you move closer to or farther away from an object. But thanks to size constancy, you still perceive the object as being the same size.

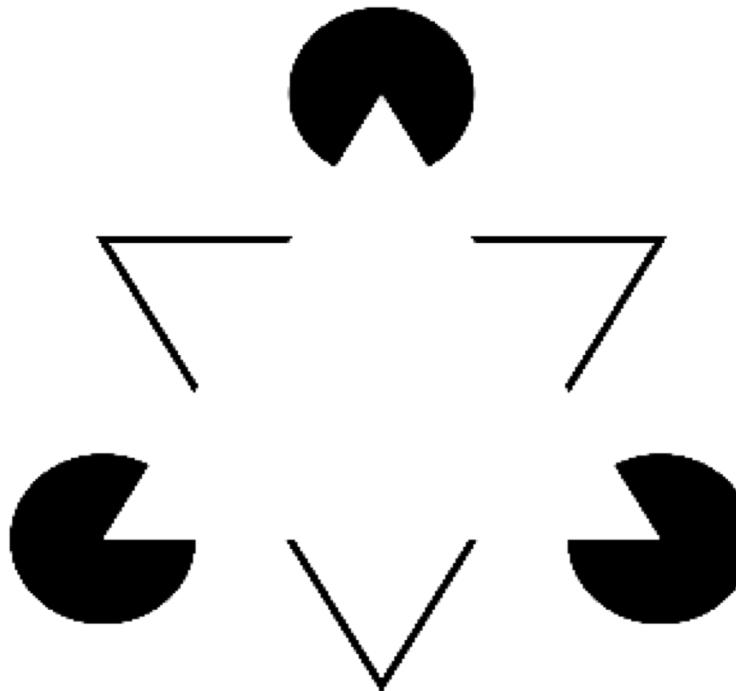


SHAPE CONSTANCY:
A door is a door is a door . . . whether it is open, shut, or viewed at an angle.

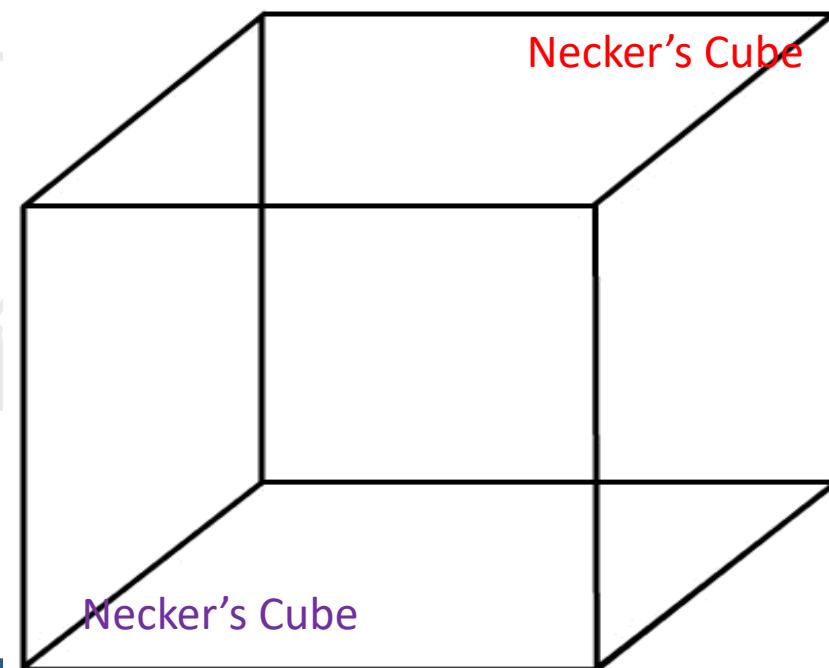




Illusion is a term used by psychologists to refer to errors in interpreting sensory information.

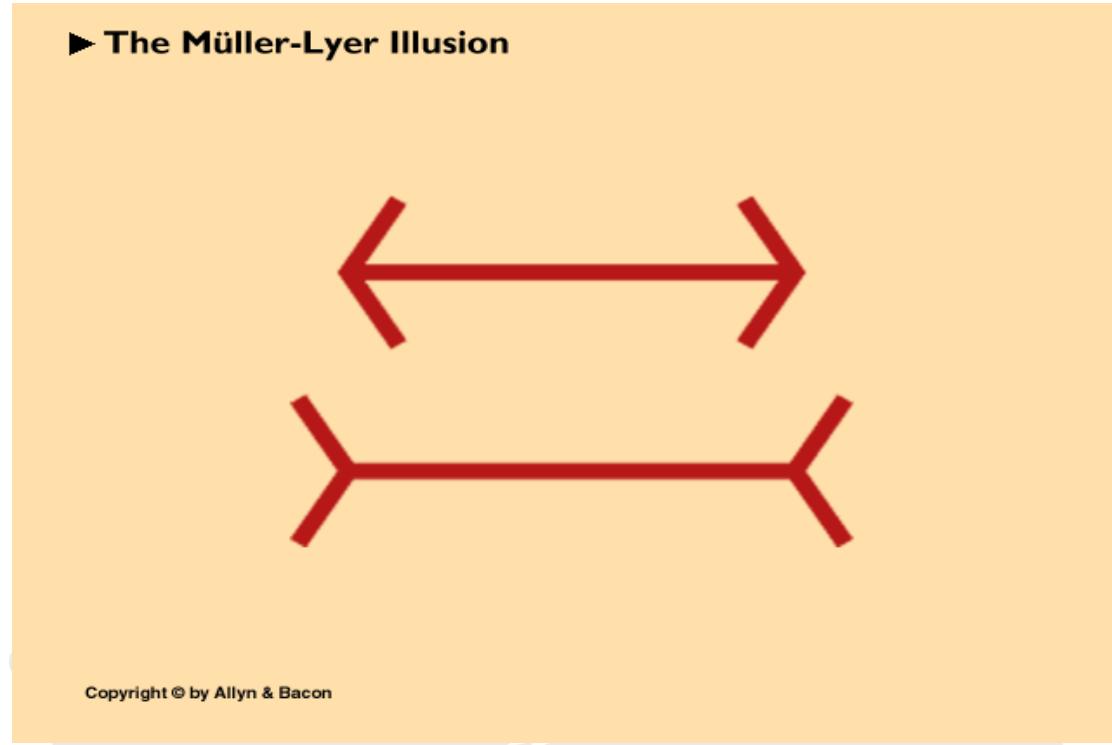


1. Two types of illusions: (i) physical processes (*mirage*) & (ii) cognitive process
2. Illusion related to cognitive processes:
(i) size (ii) shape or area



Muller-Lyer illusion

- The two lines above are the same length, but the diagonals extending outward from both ends of the lower line make it look longer than the upper line



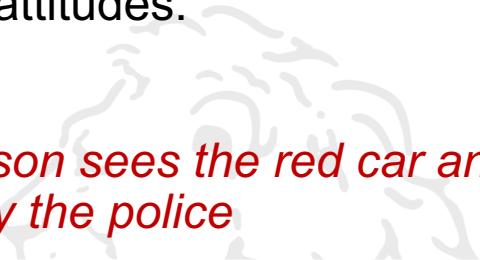
Child is more susceptible to illusion. WHY?

The Child grows older his susceptibility to the Muller-Lyer illusion decreases



Delusion Perception

- Attribution of new meaning in the sense of self reference to a normally perceived object.
- The new meaning cannot be understood as arising from the patients affective state or previous attitudes.
- For example: *person sees the red car and knows that this means their food is being poisoned by the police*



A woman said, 'every night blood is being injected out of my arms [sic]'. When asked for her evidence, she explained that she had little brown spots on her arms and therefore knew that she was being injected. The interviewer looked at the spots on her arms, rolled up his sleeve and showed her spots identical in appearance on his own arm. He said that they had been on his arm as long as he could remember and were called 'freckles'. She agreed that both sets of spots looked similar and accepted his explanation of his own spots, but she still insisted that her freckles proved that she was being injected in her sleep.

Social Perception (Jerome S. Bruner, 1915-2016)



Hypothesis: *The greater the individual need for a socially valued object, the more marked will be the operation of behavioral determinants.*



Value and Need as Organizing Factors in Perception (1947)

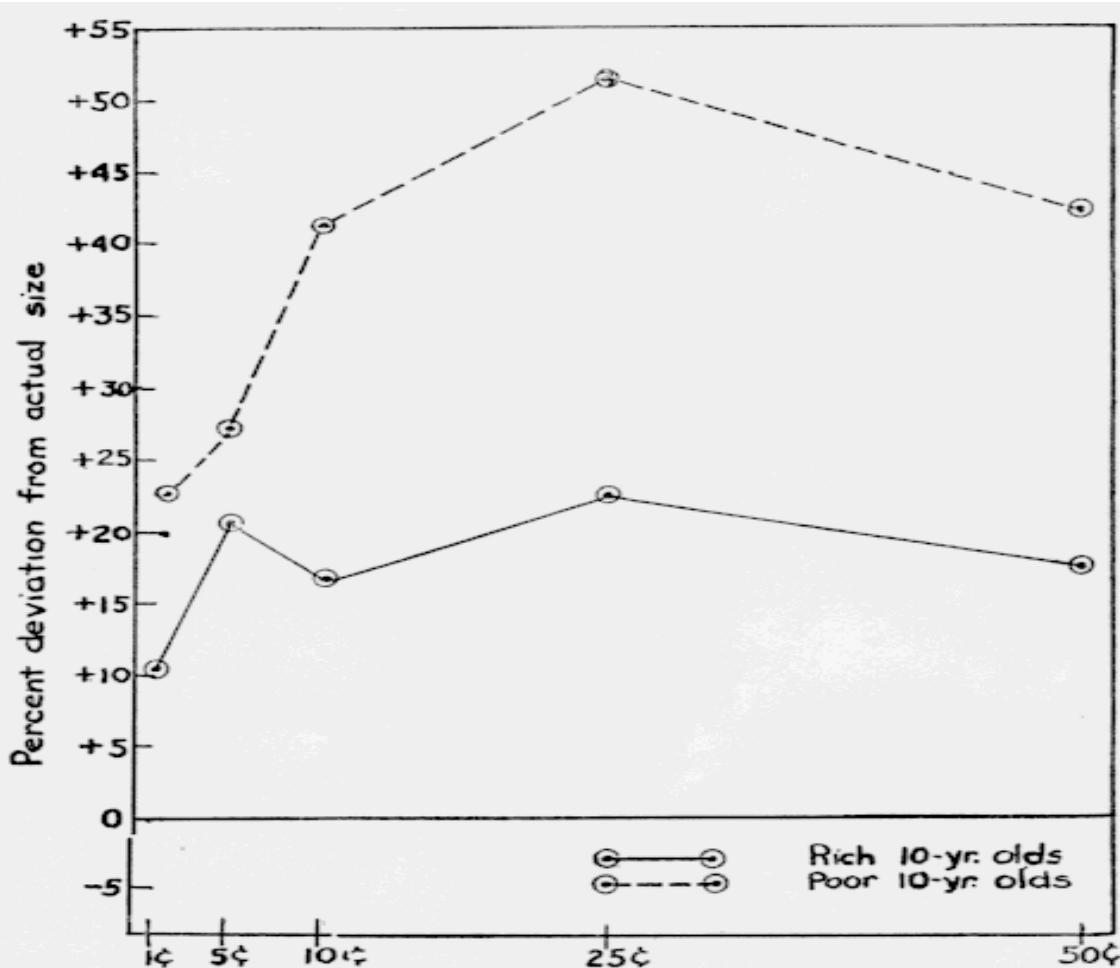


FIG. 2. SIZE ESTIMATIONS OF COINS MADE BY WELL-TO-DO AND POOR TEN-YEAR-OLDS
(Method of average error)

Principle of selectivity

- The cocktail party effect describes the ability to focus one's listening attention on a single talked among a mixture of conversations and background noises, ignoring other conversations.
- *Form of selective attention.*



THANKS!

Manish Kumar Asthana (Ph.D.)

Assistant Professor

Department of Humanities & Social Sciences,

Indian Institute of Technology

Email: asthanamfhs@iitr.ac.in