



## Unit 4

# Sensation and Perception



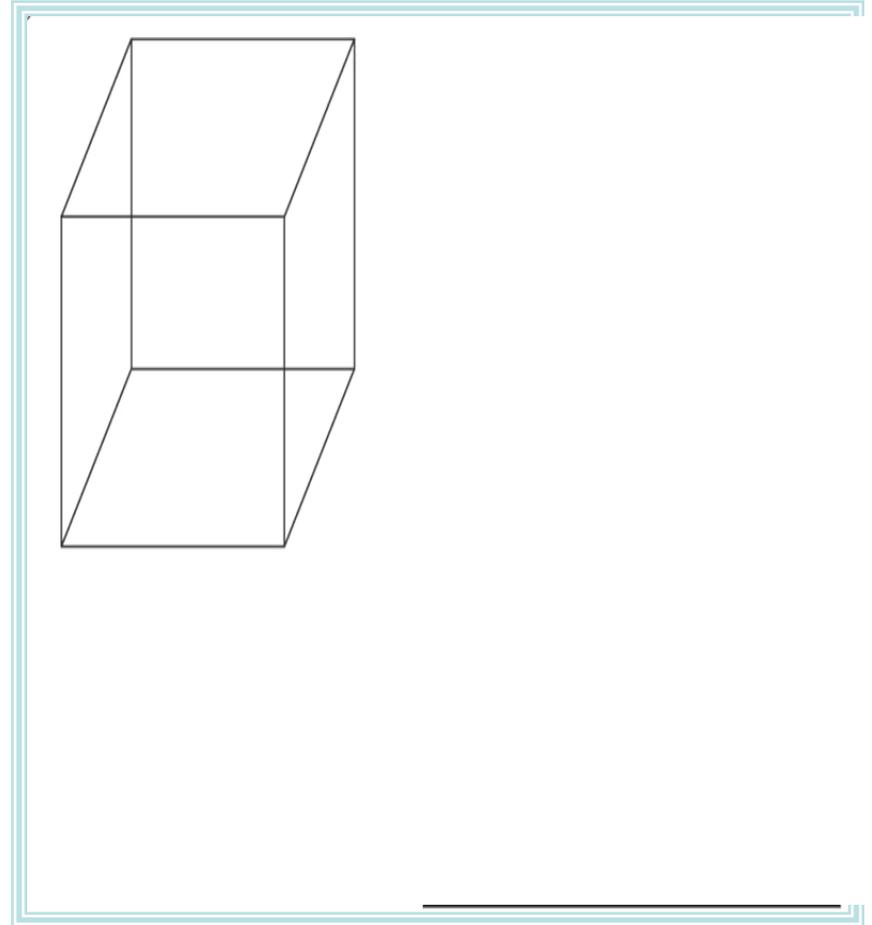
Sensation: your window to the world

Perception: interpreting what comes  
in your window.

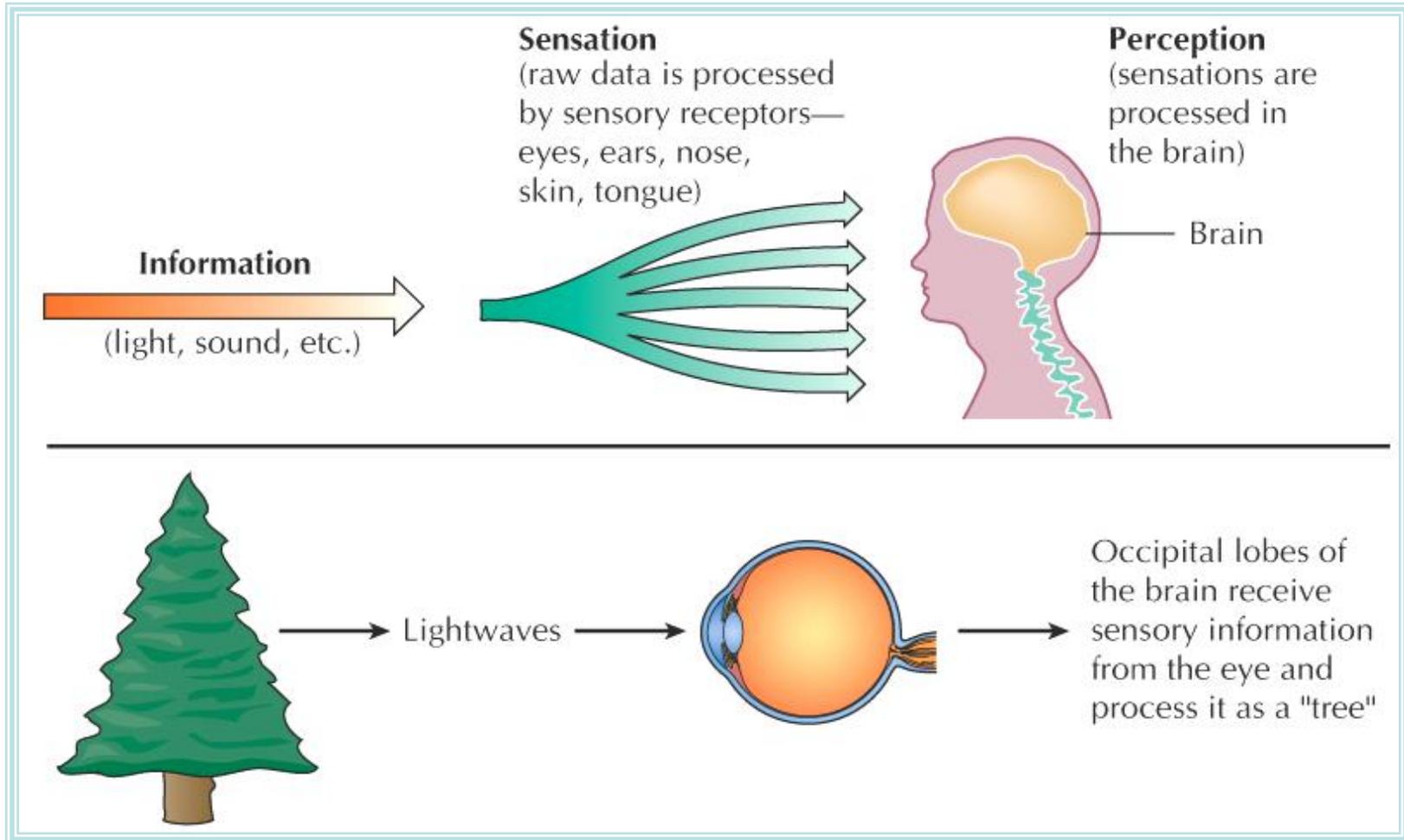
- How do we construct our representations of the external world?
- **Sensation** (process of receiving, converting, and transmitting raw sensory information from the external and internal environments to the brain)
- **Perception** (process of selecting, organizing, and interpreting sensory information)

# Sensation Versus Perception

- When you stare at the cube on the left, which area is the top, bottom, or back?
- In the figure on the right, is this a young woman looking to the right, or an older woman with her chin buried in her jacket?



# Sensation Vs. Perception



# Prosopagnosia - Face Blindness



# Prosopagnosia

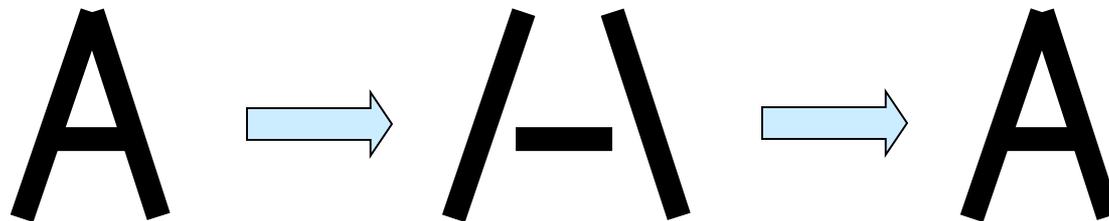
- Known as "face blindness"
- Ability to recognize faces is impaired
- Ability to recognize other objects is intact.
- Specifically affects the facial recognition system.
- So, which side of the brain is most likely affected?



*Quick write in your notebook: How does prosopagnosia demonstrate that sensation and perception are two different phenomena?*

# Bottom-up Processing

Analysis of the stimulus begins with the sense receptors and works up to the level of the brain and mind.



Letter "A" is really a black blotch broken down into features by the brain that we perceive as an "A."

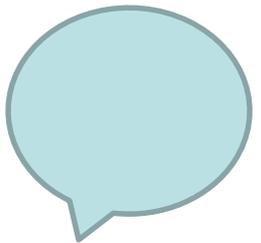
# Top-Down Processing

Information processing guided by higher-level mental processes as we construct perceptions, drawing on our experience and expectations.

**THE CAT**

Top-down processing occurs any time a higher-level *concept* influences your interpretation of lower level *sensory data*.

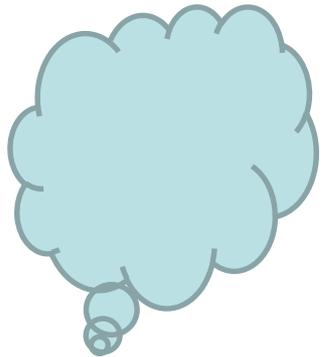
How do we know what he is thinking and what he is saying?



This...

vs.

This....



We are so used to seeing these cues, we process them without being aware of them - top down processing

Running fast or slow? How do you know?  
Top down processing!

if you can read this, you have a strange mind, too.  
Can you read this? Only 55 people out of 100 can.

I couldn't believe that I could accurately understand what I was reading. The phenomenal power of the human mind, according to a research at Cambridge University, it doesn't matter in what order the letters in a word are, the only important thing is that the first and last letter be in the right place. The rest can be a mess and you can still read it without a problem. This is because the human mind does not read every letter by itself, but the word as a whole. Amazing huh? yeah and I always thought spelling was important! if you can read this forward it.

# *Bottom up or Top down?*

- Bottom up - when we have no prior knowledge. (We start with the details at the bottom and work our way up to see the big picture.)
- Top down - when we have prior knowledge. (We start with the big picture, and can break it down into its components to process the details.)