MODULE 16: SENSATION AND PERCEPTION

SENSATION AND PERCEPTION

- **SENSATION** is the process by which our sensory receptors and nervous system receive and represent stimulus energies from our environment. **PERCEPTION** is the process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events.
- **BOTTOM-UP PROCESSING** is the analysis that begins with the sensory receptors (no prior knowledge) and works up to the brain's integration of sensory information.
- **TOP-DOWN PROCESSING** is the information processing guided by higher-level mental processes, as when we construct perceptions drawing on our experience and expectations.
- BUP is senses up and TDP is skipping the senses and using prior knowledge about what the brain remembers last time the senses were used.

SELECTIVE ATTENTION

- **SELECTIVE ATTENTION** is the focusing of conscious awareness on a particular stimulus.
- **COCKTAIL PARTY EFFECT** is your ability to attend to only one voice among many.
- Selective attention is the reason why Georgia implemented no texting while driving law.
- People blink less when attentive to something.
- **INATTENTIONAL BLINDNESS** is failing to see visible objects when our attention is directed elsewhere. (basketball passing to all in black video when gorilla walks through) Focused on a task, whether counting or answering questions, that you miss a visual stimulus you would see only after being told due to being focused on a task.
- **CHANGE BLINDNESS** is failing to notice changed in the environment. (magic or not noticing a switch occurring of people)

TRANSDUCTION

- **TRANSDUCTION** is the process of transforming stimulus energy, such as sights, sounds, and smells into neural impulses our brain can interpret.
- **PSYCHOPHYSICS** is the study of relationships between the physical characteristics of stimuli, such as their intensity, and our psychological experience of them.

THRESHOLDS

- **ABSOLUTE THRESHOLDS** are the minimum stimulation necessary to detect a particular light, sound, pressure, taste, or odor 50% of the time. Dependent on signal's strength and psychological state.

- **SIGNAL DETECTION THEORY** predicts when we will detect weak signals amid background stimulation. Seeking to understand why people respond differently to the same stimuli.
- **SUBLIMINAL** is stimuli you cannot detect 50 percent of the time. Most often come in the form of subliminal messages that is said to reach the unconscious mind. Said to briefly **PRIME** your response to a later question. This then alters one's perception, memory, or response.
- Remember, much of our information processing occurs automatically, out of sight, off the radar screen of our conscious mind.
- Can subliminal messages control our behavior? Studies show no effects are made.
- **DIFFERENCE THRESHOLD** is the minimum difference between two stimuli required for detection 50 percent of the time. Just noticeable difference. 1 ounce added to a 10 ounce weight you will detect but 1 ounce added to 100-ounce weight… not so much.
- Ernst Weber noted something so simples and so widely applicable that we still refer to it as **WEBER'S LAW**. This law states that for an average person to perceive a difference, two stimuli must differ by constant minimum percentage (not a constant amount). The intensity of the two stimuli dictate whether it is different or not.

SENSORY ADAPTATION

- **SENSORY ADAPTATION** is when a stimulus that is attracting one of your senses diminishes in sensitivity as a consequence of constant stimulation. This is due to nerve cells firing less frequently.
- Allows the body to focus on important information.

BE ABLE TO ANSWER: Explain how Heather Seller's experience of prosopagnosia illustrates the difference between sensation and perception. [research prosopagnosia]

PRACTICE FRQ: Explain how bottom-up and top-down processes work together to help us decipher the world around us..