

1 Module 11: Sensation and Perception

2 Sensation

- ♦ The unorganized jumble of information coming into the brain all at once from the outside and inside of the body
- ♦ Colors, shapes, movement, body senses, etc.

3 Perception

- ♦ How the brain organizes all the incoming information into something meaningful to me.
- ♦ The organization of raw sensory data

4 Thresholds

- ♦ If I light a single candle and keep moving it farther and farther away, how far will I get before you cannot see it any longer?
How much perfume would I have to squirt into the air for you to be able to smell it?

5 Threshold

What is the absolute minimum of stimulation that it would take for us to perceive something happening around us?

6 Absolute Threshold

- ♦ The minimum stimulation necessary to detect a particular stimulus 50% of the time.
- ♦ Examples:
Perfume: 1 drop in 3-room apartment
Sight: a candle at 30 miles on a clear night.

7 Absolute Threshold Is Important in Many Areas of Life.

Examples:

How loud does your baby have to whimper before you hear her?

How much noise does an intruder have to make before you hear him?

How bright a blip on the radar screen does it take for an air traffic controller to see an incoming plane?

8 Signal Detection: a type of threshold

- ♦ How well we are able to detect weak signals measured by correct vs. incorrect responses.
- ♦ Examples:
Does a police officer see the slight movement of the suspect hand toward his pocket?
Does the nurse see the slight change in heart rhythm that might signal a problem?

9 Signal detection depends on our motivation and emotional state

Example:

New parents, even though exhausted, will hear the slightest whimper from the

baby but will fail to hear the furnace coming on or the faucet dripping: They are very motivated to hear that particular sound.

- 10 **Additional factors that affect signal detection**
 - ◆ The time of day
 - ◆ Whether or not the person exercises regularly
 - ◆ Warm and Dember research
- 11 **Subliminal Stimulation**
 - ◆ Messages that we can detect less than 50% of the time: below threshold level.

 - ◆ Can we be unconsciously manipulated by advertisers or others with subliminal messages
- 12 **Research on subliminal stimulation**
 - ◆ Krosnik et al
 - ◆ Bar and Biederman
 - ◆ Baldwin et al
 - ◆ Car et al
- 13 **If Target stores broadcast subliminal “Don’t Steal” messages throughout the store, will shoplifting decrease?????**
- 14 **Difference Thresholds**
 - ◆ The “just noticeable difference” between two stimuli

 - ◆ The minimum difference a person can detect between two stimuli
- 15 **Weber’s Law: The difference between thresholds is always in proportion to the size of the stimulus.**
- 16 **Examples of Weber’s Law**

I might not notice a 1 cent increase in a big Mac, but I’ll probably notice a 25 cent increase.

I wouldn’t notice a 25 cent increase on the price of a new car, but I’ll probably notice a \$500 increase.
- 17 **If I make my living cleaning houses and I want to raise my rates, how should I go about doing it?**
- 18 **Sensory Adaptation**

Our diminishing sensitivity to an unchanging stimulus

- 19 Sensory adaptation only occurs when the stimulus is unchanging
- 20 Why does sensory adaptation occur?
- ◆ Because the sensory receptors in the ears, eyes, skin, tongue, nose, etc. become fatigued when they are exposed to a stimulus for a long time and become less sensitive.
 - ◆ Pritchard research
- 21 Sensory adaptation allows us to pay more attention to how are changing in the world around us things rather than to how they remain the same.
- Examples:
 - At the beach
 - In the forest
 - In class
 - Driving
- 22 We perceive the world, not necessarily as it actually is, but as it is useful for us to perceive it.
(Evolutionary perspective)
- 23 Selective Perception
- ◆ Right now your shoes are pressing against your feet, your earrings are pinching your ears, your brain is receiving information about your heartbeat and your eyes are registering the amount of light in the room, but you are able to filter most of these out and pay attention to only 1 or 2 things at one time.
- 24 Selective attention: the opposite of sensory adaptation
- ◆ Neisser research
 - ◆ Basic idea: we can ignore changes in the world around us if we are paying close enough attention to something else.
 - ◆ Ex: Lamaze