

Chapter 4 - sensation and perception

- Basic principles
 - Sensation - process by which the body gathers information about the environment
 - Perception - process by which the brain organizes and interprets sensory information
 - Ambiguous figures - give rise to different perceptions
 - Three basic principles
 - There is not a one to one correspondence between physical and psychological reality
 - Sensation and perception are active processes
 - Sensation and perception are adaptive
- Common features of sensory systems
 - Transduction - sensory receptors translate physical stimulation into neural signals
 - Threshold - each system has a minimum amount of energy requires to activate the system
 - Absolute threshold - level a person can detect 50% of the time
 - Just noticeable difference - minimum difference in stimulation that is just noticeable
 - Weber fraction - weight 1/50
 - 1 pound - 50
 - 2 pounds to 100
 - Sensory adaptation - our sensory system responds less to stimuli that continue without change
- Vision
 - Function of the eye
 - distinguish or detect electromagnetic radiation (light)
 - detection of movement
 - detection of color
 - light detection
 - useful because light travels rapidly
 - also vision requires light
 - details of the human eye and retina
 - key elements
 - pupil : opens/closes in response to light
 - lens : focuses eye
 - retina : sends messages to the optic nerve
 - transduction of light
 - light travels through the retina and impinges photoreception at the back of the eye
 - two types of photoreceptors
 - cones - center of retina. Sensitive to fine detail and color
 - rods - periphery of retina and sensitive to movement
 - perception of color
 - 3 dimensions of color
 - Hue- apparent color of an object
 - Brightness- intensity of the color
 - Saturation - purity of the color

- 3 different types of colors - sensitive to different wavelength
- o Color vision theories
 - Young-helmholtz trichromatic theory - color is explained by differential activation of 3 color elements - red, green, and blue
 - Opponent-process theory - colors come from antagonistic systems
 - Black - white
 - Red - green
 - Blue - yellow
 - Can explain after images