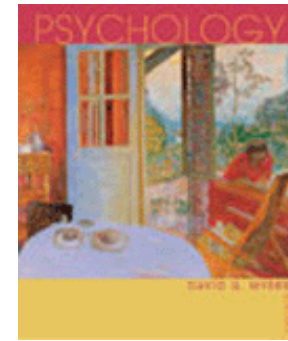
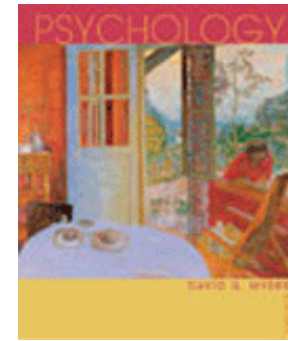


Myers' *PSYCHOLOGY*
(6th Ed)



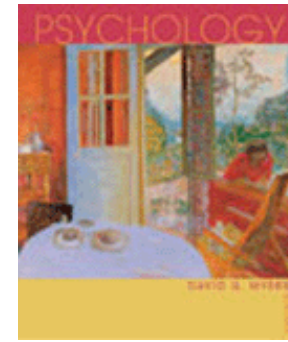
Chapter 5
Sensation

Sensation



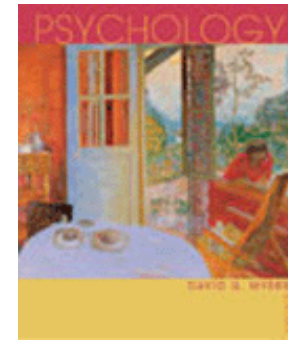
- Sensation
 - a process by which our sensory receptors and nervous system receive and represent stimulus energy
- Perception
 - a process of organizing and interpreting sensory information, enabling us to recognize meaningful objects and events

Sensation



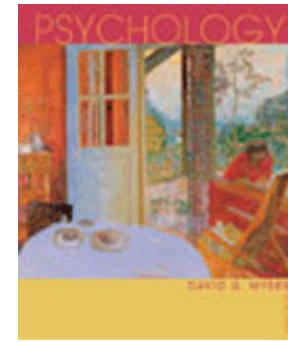
- Our sensory and perceptual processes work together to help us sort out complex processes

Sensation- Basic Principles



- Psychophysics
 - study of the relationship between physical characteristics of stimuli and our psychological experience of them
 - Light- brightness
 - Sound- volume
 - Pressure- weight
 - Taste- sweetness

Sensation

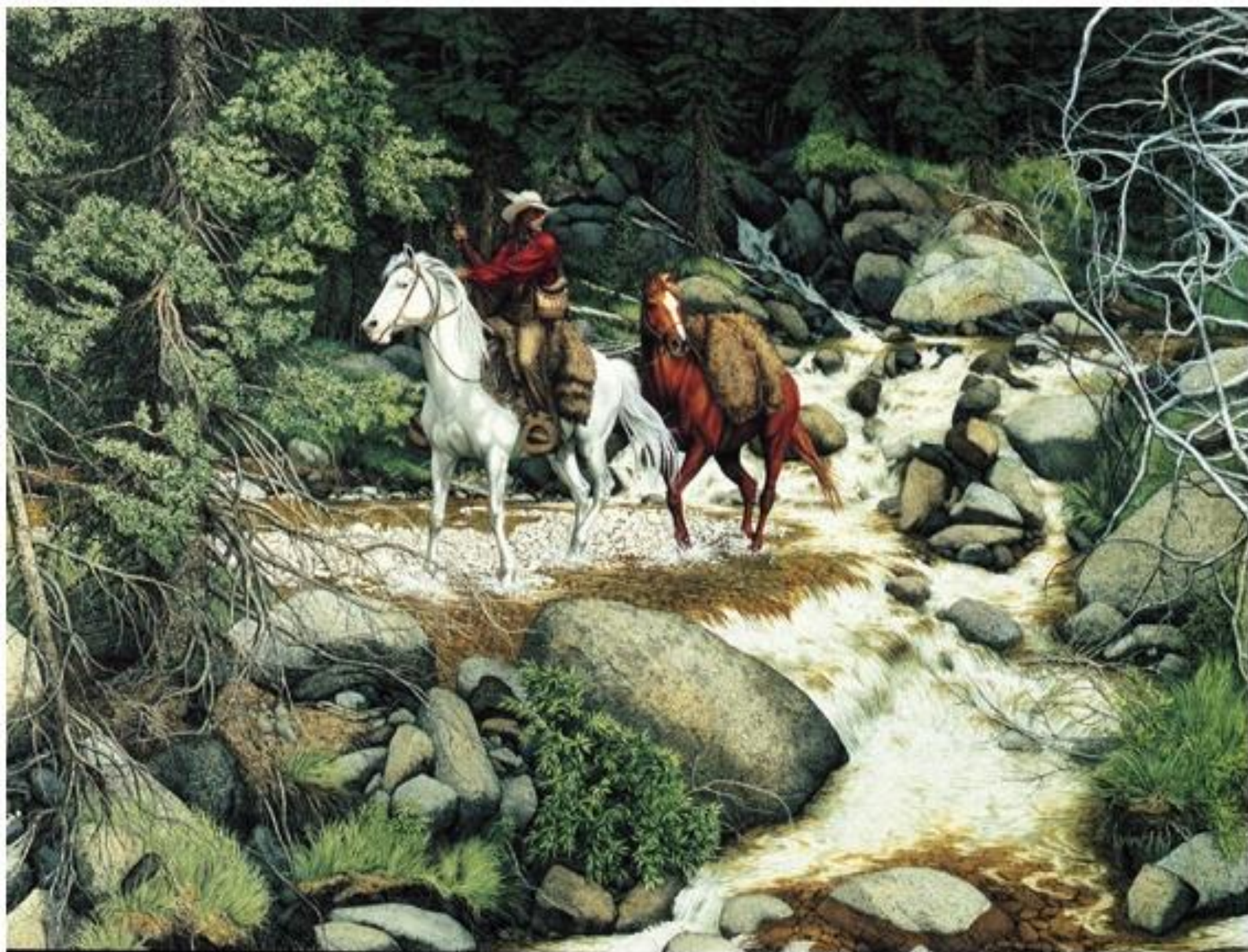


- **Bottom-Up Processing**
 - analysis that begins with the sense receptors and works up to the brain's integration of sensory information
 - We use the features on the object itself to build a perception.
- **Top-Down Processing**
 - information processing guided by higher-level mental processes
 - as when we construct perceptions drawing on our experience and expectations

Top-Down Processing

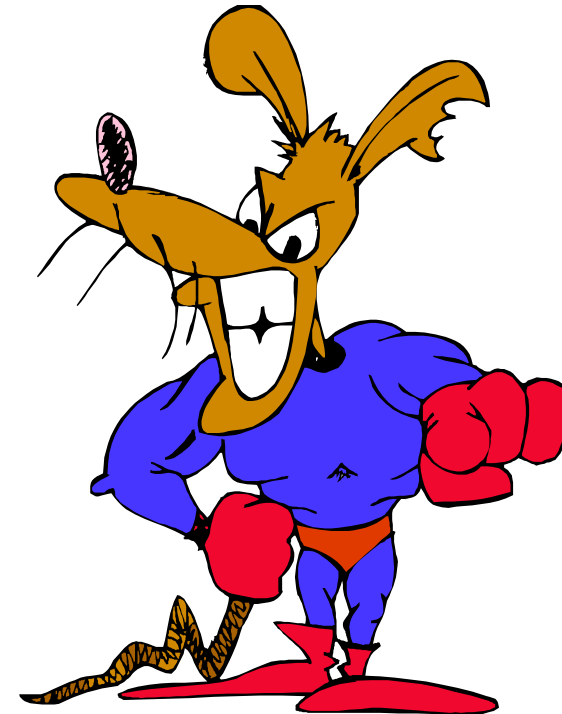


- We perceive by filling the gaps in what we sense.
- I _ant ch_co_ate ic_cr_am.
- Based on our experiences and schemas.
- If you see many old men in glasses, you are more apt to process a picture of an old man (even when you may be in error).



Transduction

- Transforming signals into neural impulses.
- Information goes from the senses to the thalamus , then to the various areas in the brain.



Sensory Adaptation



- Decreased responsiveness to stimuli due to constant stimulation.

Cocktail-Party Phenomenon

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



In-Attentional and Change Blindness

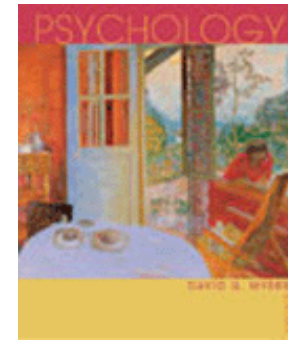
□ In-Attentional Blindness

- When we are focused on one action so we miss another action.

□ Change Blindness

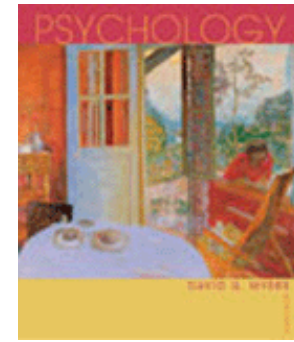
- We are so focused on a task so we are unaware when the surroundings change.

Sensation- Thresholds



- Absolute Threshold
 - minimum stimulation needed to detect a particular stimulus 50% of the time
- Difference Threshold
 - minimum difference between two stimuli required for detection 50% of the time
 - just noticeable difference (JND)

Sensation- Thresholds



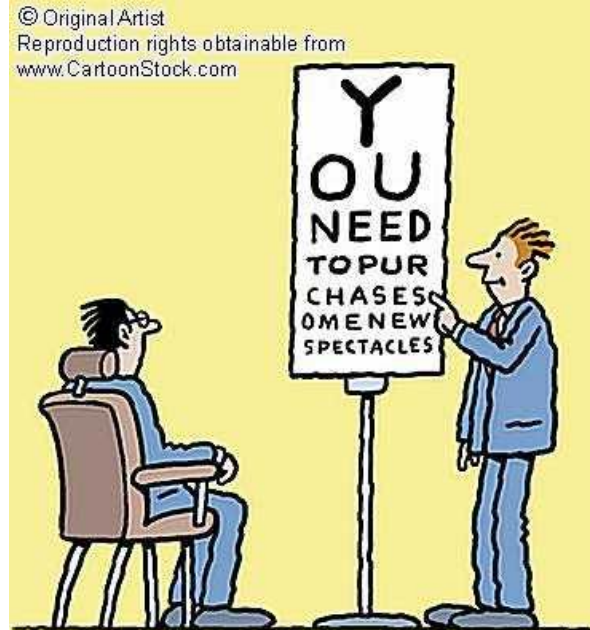
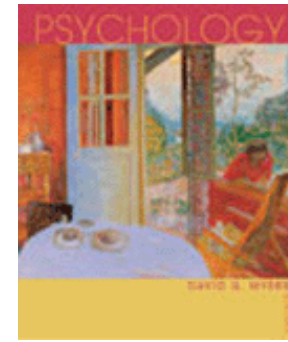
- Signal Detection Theory
 - predicts how and when we detect the presence of a faint stimulus (signal) amid background stimulation (noise)
 - Things like motivation or physical state can effect what we sense.
 - detection depends partly on person's
 - experience
 - expectations
 - motivation
 - level of fatigue



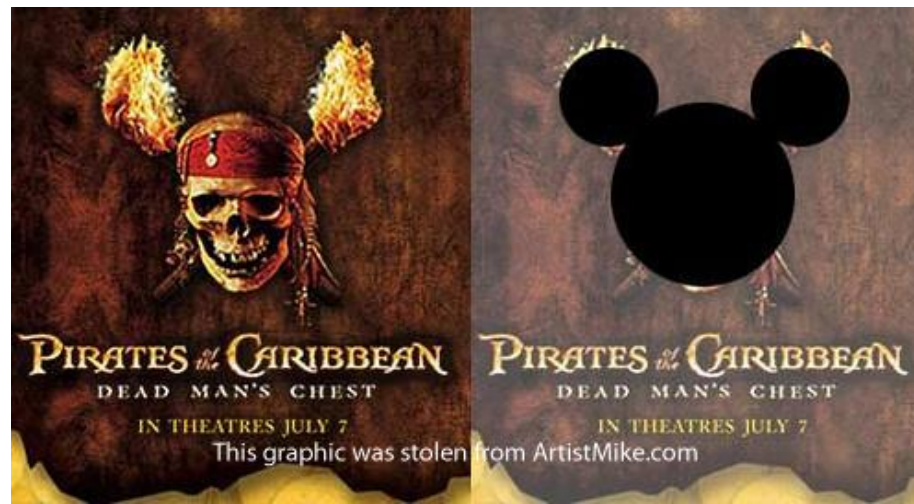
Signal Detection Practice Quiz

1. Signal detection theory argues that
 - (A) there is no such thing as a difference threshold
 - (B) absolute thresholds are the same for all sensory systems
 - (C) deaf people are better at detecting dim light
 - (D) the ability to detect sound depends on a person's motivation
 - (E) static can easily overwhelm a radio signal
2. If a person detects a signal and the signal was actually there, this is known as a
 - (A) miss
 - (B) hit
 - (C) false positive
 - (D) incorrect rejection
 - (E) correct rejection
3. You would predict that a person in a signal detection experiment who earns a dollar for every "Hit" is likely to
 - (A) not be motivated to detect the signal
 - (B) have a lot of false positives as well as hits
 - (C) have a lot of misses as well as hits
 - (D) not make very much money
 - (E) increase the expectation of a signal with every dollar earned
4. Justin is waiting for his friend Tyler to show up for a movie and is looking for Tyler in the crowd. Justin is anxious because the movie is about to start so he's hoping Tyler shows up very soon. As Justin looks at faces in the crowd looking for Tyler, which of the following scenarios would represent a correct rejection?
 - (A) Justin sees a face, decides it is not Tyler, but it is
 - (B) Justin sees a face, decides it is Tyler, and it is
 - (C) Justin sees a face, decides it is not Tyler, and it isn't
 - (D) Justin sees a face, decides it is not Tyler, but still cannot tell if it is or isn't
 - (E) Justin sees a face, decides it is Tyler, but it isn't

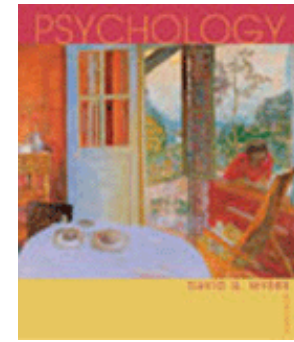
Sensation- Thresholds



- Subliminal
 - When stimuli are below one's absolute threshold for conscious awareness



Sensation- Thresholds



- **Weber's Law**- to perceive as different, two stimuli must differ by a constant minimum percentage
 - light intensity- 8%
 - weight- 2%
 - tone frequency- 0.3%



- **Sensory Interaction**

- the principle that one sense may influence another
- as when the smell of food influences its taste
- McGurk effect: when we see one thing and hear another