**Sensing The World**

**Sensation**is referred to as being **bottom-up processing** or the detection of environmental stimuli from our senses *up*to the brain. **Perception** will be discussed in the following unit and refers to **top-down processing** or the process by which we select, organize and interpret our sensations.

The following principles are important to understand when discussing why we sense some stimuli and not others:

**Absolute Threshold:**refers tothe lowest amount of stimulus needed to notice it **50%** of the time. For example, if you turn down the television to a point where you only hear the faint sound half the time. Then that loudness (decibel level) is your absolute threshold for sound.

**Signal Detection Theory:**allows us topredict when we will notice a weak stimulus (signal). It takes into consideration that the detection of a stimulus also depends on your state of arousal, expectations, experiences, and motivation.

**Subliminal Stimulation:**refers to a stimulusthat is below your absolute threshold in that you detect it **less than 50%** of the time. For instance, a speck of dust that falls on your face is subliminal to you because you cannot see it with your naked eye. Research shows that subliminal advertisements (Drink Coke, eat popcorn etc.), do have an affect on you but do not persuade you.

**Difference Threshold**(*just noticeable difference*or *jnd*): this is the lowest **difference** you can detect between two stimuli **50%** of the time. For example, if you are able to detect a difference in the weight of two objects that are 10 lbs and 10.5 lbs respectively but only 50% of the time, then this 0.5 lb difference is described as your difference threshold. Someone who is well trained musically will have a *lower*difference threshold than someone who is not; the musician is better able to detect slight differences in tone for instance. This difference increases with the magnitude of the stimulus. For example, you will be able to tell the difference between a 10 lb weight and a 15 lb weight but you will not notice a difference between a 100 lb weight and a 115 lb weight even though both sets differ by the same 5 lbs. Hence, we refer to Webers Law.

**Webers Law:**states that two stimuli must differ in proportion, not in absolute amount, for a person to detect it.  See above example.

**Sensory Adaptation:**is oneslowered sensitivity due to constant exposure from a stimulus. For example, when you go into a classroom you may notice an odorbut this only lasts for a little while because after constant exposure to a stimulus, our nerve cells fire less frequently. Sensory adaptation allows you to focus your attention without being constantly averted by insignificant stimuli such as smells, noise, etc.