

## A. DETECTION:

**DETECTION:** the active, usually conscious, sensing of a stimulus.

## A. DETECTION:

### A.1 Absolute Threshold Theory

- Minimum detectable amount of physical energy for you to notice it (50% of the time)

## Absolute Sense Thresholds

<b>Vision</b>	Candle, 30 miles, clear dark night
<b>Hearing</b>	Tick of a watch, 20 feet , quiet conditions
<b>Taste</b>	1 teaspoon of sugar, 2 gallons of water
<b>Smell</b>	1 drop of perfume, diffused to air volume of 6 rooms
<b>Touch</b>	Wing of a bee, falling to your cheek, from 1 cm.

## Detection cont...

### A.2 Signal-Detection Theory:

some factors will distort your detection (decision not just detection)

## SDT

<b>Hit</b>	stimulus present, you said it was
<b>Miss</b>	stimulus present, you said it was not
<b>False Alarm</b>	stimulus absent, you said it was present
<b>Correct Rejection</b>	stimulus absent, you said it was not present

## B. Discrimination

- Ability to discern the difference between stimuli.

## B. Discrimination

**B.1 Just Noticeable Difference:** the minimum amount that needs to change for you to notice that there was a change. (JND)

## B. Discrimination

### B.2 Weber's Law

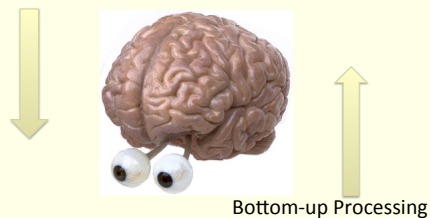
- $\Delta I = k I$
- Change in Intensity = k constant x Intensity  
(k constant = Weber's fraction)

## Weber's Fraction (k constants)

<b>Pitch</b>	.003
<b>Shock</b>	.01
<b>Weight</b>	.02
<b>Length</b>	.03
<b>Loudness</b>	.05
<b>Odor</b>	.05
<b>Brightness</b>	.08
<b>Taste</b>	.2

## C. Other Factors can be involved:

Top-down Processing



## C1. Top-down Processing

- Information guided by higher-level mental processes
- Based on experience and expectations.

## C2. Bottom-up Processing

- Begins with the sensory receptors and works up to the brain

### C3. Selective Attention

- ability to track one sensory message and completely ignore others.
- Then to switch.

### C3. Selective Attention ex.

- **Cocktail party effect** – auditory tracking and blocking out other voices in social settings

### C3. Selective Attention ex.

- **Inattentional blindness** – failure to see something right in front of us because we are focused elsewhere.

### C3. Selective Attention ex.

- **Change Blindness:** failing to notice change in the envt around us.