

## Weber's Law

- \* Developed by EH Weber( Ernest Henrich Weber)
- \* It was the first systematic attempt to formulate a principle which governed the relationship between psychological experience and physical stimulus.
- \* According to this law, as magnitude of the standard stimulus is increased, the size of change needed for discrimination between the standard and the comparable stimulus (i.e. JND) is also increased. Thus, greater the magnitude of the standard stimulus, the greater the size of the JND.
- \* The law may be stated in terms of the following equation.

$$\frac{\Delta R}{R} = K$$

where  $\Delta R$  = differential limen

R = standard stimulus

K = constant

- \* The constant in Weber's law is always a fraction and is known as the Weber fraction or proportion. It indicates the proportion by which the standard stimulus must be increased in order to produce the just noticeable difference or detect a change.
- \* If the Weber fraction is larger, the DLs for the given stimulus dimensions will also be larger.
- \* One advantage of Weber fraction is its direct comparability. Since the fraction is not dependent upon a physical unit in terms of which the standard stimulus and

the DL are measured, the fractions can be compared across the different stimulus dimensions.

- \* Weber fractions: - 0.020 for heaviness, 0.030 for line length, 0.079 for brightness, and 0.014 for electric shock.
- \* One general difficulty with Weber's law is that its precision is lost where the standard stimulus reaches the extreme, i.e. when the standard stimulus becomes either very weak or very strong, the precision is lost to a great extent.