



Psychophysics -

The method of constant
stimuli



Unit 3

Chapter 4

The **method of constant stimuli** is also known as

- ✓ Method of right and wrong cases
 - ✓ The frequency method
 - ✓ The method of constant stimuli difference
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- This method is used to measure **difference threshold**
 - “difference threshold is the minimum difference between the **two stimuli** that a person can detect 50% of times.”
 - This method requires a series of **forced – choice or yes/ no trials**

EXPERIMENT – WEIGHT DISCRIMINATION

- I. The apparatus required is called the **whipple’s weight box** , there are **12 weights of** --- 10 grams,12 , 14,16,18,20,22,24,26,28,30 grams
- II. The method requires 2 stimuli – **a standard stimulus and a variable stimulus**
- III. The weights are presented in **random order**
- IV. Responses are asked in terms of **higher, lighter, equal** called three category response
- V. In half the trials the standard is presented first and in the other half the variable weight is presented first
- VI. **A random table** is required to select the weights

STATISTICAL ANALYSIS

- I. **Lower threshold /limen** – the point where the lighter responses change to equal responses 50% of times.
- II. **Higher threshold / limen** – the point where the equal responses change to heavier responses 50 % of times
- III. **Difference limen** – the magnitude of the smallest difference between the two stimuli that a subject can detect 50% of times. $DL = L_h - L_l / 2$
- IV. **PSE** – is that stimulus value where the subject perceives all the variable weights equal to the standard weight.
 $PSE = L_h + L_l / 2$
- v. **Constant error** –
overestimation - when the variable weights are perceived more than the standard weight
underestimation – when the variable weights are perceived less than the standard weight
- Vi. **Interval of uncertainty IU** - the difference between the higher and lower threshold
 $IU = L_h - L_l$