EXTRANEOUS VARIABLES

When we conduct experiments there are other variables that can affect our results, if we do not control them. Extraneous variables are all variables, which are not the independent variable, but could affect the results of the experiment. An infinite number of extraneous variables (EV) exist that might affect a given relationship. Some can be treated as independent or moderating variables, but most must either be assumed or excluded from the study. Such variables have to be identified by the researcher. In order to identify the true relationship between the independent and the dependent variable, the effect of the extraneous variables may have to be controlled. This is necessary if we are conducting an experiment where the effect of the confusing factors has to be controlled. Confounding factors is another name used for extraneous variables.

There are four types of extraneous variables:

1. **Situational Variables:** These are aspects of the environment that might affect the participant's behaviour, e.g. noise, temperature, lighting conditions, etc. Situational variables should be controlled so they are the same for all participants.

2. **Participant / Person Variable:** This refers to the ways in which each participant varies from the other, and how this could affect the results e.g. mood, intelligence, anxiety, nerves, concentration etc. For example, if a participant that has performed a memory test was tired, or had poor eyesight, this could affect their performance and the results of the experiment.

3. **Experimenter / Investigator Effects:** The experimenter unconsciously conveys to participants how they should behave - this is called experimenter bias. The experimenter might do this by giving unintentional clues to the participants about what the experiment is about and how they expect them to behave. This affects the participants' behaviour.

4. **Demand Characteristics:** These are all the clues in an experiment which convey to the participant the purpose of the research. Participants will be affected by:

    - Their surroundings
    - The researcher's characteristics
    - The researcher's behavior (e.g. non-verbal communication)
    - Their interpretation of what is going on in the situation