

Psychology 2020 Introduction to Psychological Methods

Unit 4 Conducting Experiments

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Steps in Conducting an Experiment

- Randomly select research participants that represent the population of interest.
- Manipulate the independent variable.
- Measure changes in the dependent variable.
- Control for extraneous variables that might confound the results of the experiment.
- Debrief the participants after the experiment.

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Setting the Stage for the Experiment

- Setting the stage means preparing the participants for the experiment.
 - Participants must give informed consent showing that they understand what is expected of them in the experiment and the potential risks of participation.
 - Experimenters also tell the participants why the experiment is being conducted.
- Why do you think we must "set the stage"?

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Types of IV Manipulations

- Straightforward manipulation
 - The levels of the independent variable are changed directly for each condition of the experiment.
- Staged manipulations
 - Real conditions are "faked" to represent changes in the independent variable.

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Strength of the IV Manipulation

- To insure that the independent variable manipulation will cause a change in the dependent variable, the manipulation should be as strong as possible.
- When using strong manipulations remember the following:
 - Strong manipulations may not be realistic (occurring at the strong level in the natural environment).
 - Strong manipulation may be unethical if harm is possible.

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Dependent Variable Measures

- Self-report
 - The participant answers questions about themselves or collects their own data about their behaviors.
- Behavioral measures
 - Direct observation of what the participants do in the experiment.
 - Often recorded as response rate, duration, reaction time, percent correct, etc.
- Physiological measures
 - GSR, EMG, EEG, heart rate, etc. are common physiological measures.

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Sensitivity of Measures of the DV

- The measure of the DV should be sensitive enough to detect changes caused by the IV.
 - A *ceiling effect* is when the IV appears to have no effect because participants are already responding so well they couldn't get any better when the IV is introduced.
 - A *floor effect* is when responding is so low that the IV could not lower it any further and therefore looks ineffective.