Chapter 11: Quasi-Experimental Designs

Psychology 2301

Introduction to Research Methods

University of Houston

“True” Experimental Design

- Randomly assign participants to levels of the independent variable
- Control for extraneous variables
- Measure dependent variable
- Differences in dependent measure are due to independent variable (internal validity)

Quasi-Experimental Designs

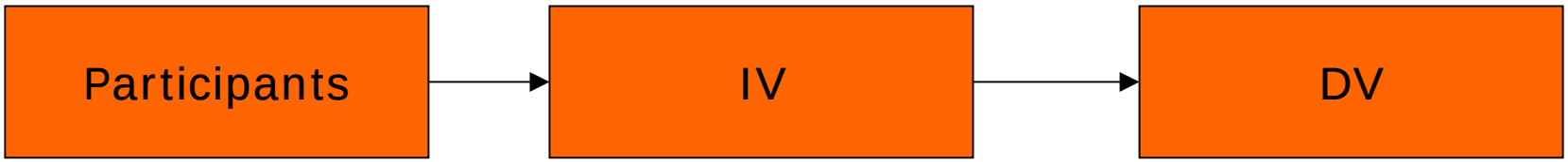
Quasi-Experimental Design

- If no manipulation is performed on the IV, the design is correlational.
- If the IV is manipulated, but there is not complete random assignment to conditions, the design is called quasi-experimental.

Quasi-Experimental Design

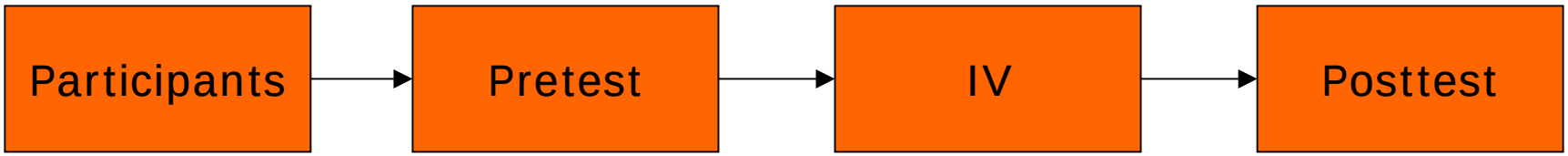
- One-group Posttest-only design
- One-group Pretest-Posttest design
- Nonequivalent control group pretest-posttest design
- Interrupted time series design
- Control series design

One-group Pretest-only design



- With 1 level of the IV, only an experiment in the loosest sense.
- This design is only good for description.
- Example: The effect of an information campaign on condom use.

One-group Pretest-Posttest design



- The addition of a pretest gives us a comparison by which we can assess the effect of the IV.
- Example: The effect of an information campaign on condom use.
- Again, though, only 1 level of the IV limits us
- Why?

Limitations of the One-group Pretest-Posttest design

- History: Event *outside* the experiment or participants which may affect the measurement.
- Maturation: Change *within* the participants which may affect the measurement.
- Testing: When the testing itself affects the participants.
- Instrument decay: Change in the measurement itself

Limitations of the One-group Pretest-Posttest design

- Regression toward the mean: The more extreme a score is, the more likely it is to be closer to the mean at a later measurement.
  - Example: Yao Ming is 7’ 6” tall. If he were to have children, the chances of him having a child that is taller than him is statistically smaller due to the extremity of his height.

Nonequivalent Control Group Pretest-Posttest Design

- Treatment and control groups may not be equivalent
- Use pretest to assess equivalence
  - If there is not group equivalence it is still possible to ascertain the effects of the independent variable through changes in test scores (pretest and posttest)
  - If IV had an effect, experimental group will exhibit greater change

Interrupted Time Series Design

- Encompasses more time
  - Interpret more than two data points, which allows you to look at a *pattern*, rather than just two points in time.
- Allows for clearer interpretation of effect of the intervention
- Figure 11.2 (pg. 203)
- Problem: ?

Control Series Design

- An improvement of the previous design through the addition of a control group
- Better perspective with comparison group
- Figure 11.3 (pg. 204)

Questions?

- Ignore Single-case Experimental designs, pp. 204-208.