Review: Post-test Only (Between Groups) Design—Chapter 6

- Determine Hypotheses (A Priori vs. Null)
- Define IV
- Determine Control Comparison (Everything identical except IV)

  (sometimes population mean and sd is used as a comparison group)
- Define DV's and their Operational definitions
- Data analysis (usually t test)

  alpha (Type 1 error); Beta (Type II error)

Pretest Posttest design

Chapter 7:

Internal vs. External validity

Internal validity: Experiment is set up so that you can be **sure** that the IV caused the DV

External validity: Experiment is set up so its findings can apply to the “real world.”

Pretest Posttest design

Internal Validity is FUNDAMENTAL to any experiment. There should be no confounding variable that adds an alternative explanation.

Internal Validity has to be present before you even talk about External Validity

Why be concerned about this?

Pretest Posttest design

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Why be concerned about this?

Because Pre-Post design poses three serious threats to internal validity

Threat to Internal Validity

Definition: Any aspect of research design that produces a confound with the IV and thus weakens the logical link between the IV and the DV

There are at least Nine Major threats to Internal Validity that have been studied

The three most important with this design are

1. History
2. Maturation
3. Testing Effects

History

Events that potentially influence the DV.

What **events** might influence this example?

Example:

Hypothesis: Outward Bound-type activity increases young people's self-confidence.

1. Test of self-confidence
2. Outward Bound activity for a week
3. Test of self-confidence

Maturation

Change as a function of person growing, maturing, changing over time

Examples—developmental changes, learning, getting hungrier, sleepier, colder, over time

What Internal changes over time might influence self-confidence?

Testing Effects

Same example: Effects of assessment of self-confidence

Examples, awareness of contingencies, new knowledge just from testing alone (“now I know how to do it”), knowing what to expect, etc.

Use Outward Bound example again

Pre-Post Design

Advantage—decreases individual difference effects. Each participant acts as his/her own control.

Disadvantage—Threats to Internal Validity:

History

Maturation

Testing Effects

Could all be confounds.