Chapter 9 – Lecture 9  
Control to Reduce Threats to Validity
How to control threats

1. General control procedures
2. Control over subject and experimenter effects
3. Control through participant selection and assignment
4. Control through specific experimental design

“Control For”
1. General Control Procedures

a. Preparation of Setting – LAB = CONTROL
   Control over research setting

Lab
++internal validity
--generalization

Applied setting
--internal validity
++generalization

LAB = tradeoff with external validity???

Natural environment
In the lab
Stanford Prison Experiment

- the psychological effects of becoming a prisoner or prison guard
- set up a simulated a prison
Planned simulation of 2 weeks (1971)

N = 24 college students from the U.S.
$15/day by participating in a study
Flip of coin → prisoner & guard

basement of Stanford's Psychology Department building
1. General control procedures – threats to validity

a. Preparation of setting – LAB = CONTROL
b. Response Measurement

Focus on the DV: careful selection of the measurement
• scale...reliable & validated (scale development)
• equipment
• techniques

1. General control procedures – threats to validity

b. Response Measurement

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c. Replication
- Pilot experiment: dress rehearsal
- Exact replication: ditto
- Systematic replication: modify theory
- Conceptual replication: repeat with different OD of variables
2. Control over Subject & Experimenter effect
   - motivation
   - knowledge
   - expectations

a. blind
b. double blind procedures
Experimenter knows the hypothesis, subject assignment etc…

Blind: participant does not know or is “blind” to assignment into a group

Double Blind: both RA & Subject do not know (drug studies/ light therapy)
3. Control through subject selection & assignment

→ Random Sampling!!! Everyone has = chance for selection

\[ \text{Unbiased sample} \]

Table of random # or r# generator

only way to control for unknown factors (potential confounds)
Potential confounds are evenly distributed!

→ Subject Assignment - random assignment!!!
free random assignment (use random number table)
mixed matched random assignment - (age, weight)

General Population
Everyone..

Target population

Representative sample (n)
4. Control over experimenter design

→ Simple Pretest-posttest design
→ Pretest-posttest, control group design
Control through Design

Single group Pretest-posttest

Pretest Group A TX Posttest

Compare

Randomized, Pretest-Posttest, Control Group Design

R Group A (Ex) Pretest TX Posttest

R Group B (Con) Pretest no TX Posttest

Compare