

Week 6: Experiments and More Controlled Comparisons

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Review

- ▶ Bivariate vs. Univariate Graphs
- ▶ Controlled Comparisons
- ▶ Other?

Dealing with Confounds

- ▶ Like you guys brought up, it almost seems like we can come up with an UNLIMITED number of potential confounds.
- ▶ But, what if there were no differences on those confounds?
- ▶ Studying and Grades (Binge Drinking Confound)
- ▶ Lipitor and Cholesterol (Exercise Confound)
- ▶ Vaccinations and Autism (...)

Essentials of an Experiment

- ▶ Random Assignment into Treatment and Control Groups
- ▶ A treatment
- ▶ Observational Treatments
- ▶ **That's it!**

Measuring Effects & Validity

- ▶ Pre-test measure?
- ▶ Pre-test and Post-test measure?
- ▶ What about Validity? Think bullseye again.

Measuring Effects & Validity

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- ▶ What about Validity? Think bullseye again.
- ▶ Internal Validity
- ▶ External Validity

Examples

- ▶ Corruption of Mexican Elections
- ▶ Aderol & Grades
- ▶ Singing to a Plant
- ▶ Microcredit & Development
- ▶ Your idea to save the world

Observations

This is the type of data that we are working with in SPSS.

- ▶ ANES
- ▶ BLS, CPS, Census, etc.

- ▶ Can we randomly assign our excel spreadsheet an aspirin?
What about ourselves?

Controlled Comparisons

- ▶ Compare Similar Cases – This is Qualitative Studies work: Ethnography, Early Sociology, Economic History, Early Public Health.
- ▶ With categorical data, this is *JUST* the three way cross-tab we undertook last week.

Why Sample?

- ▶ Want to say something about a large group of people.
- ▶ We're limited in budget, or limited in time.
- ▶ Pick a small number of units, and use them to talk about a large number of units.

- ▶ Think about sampling for a coin of unknown distribution.

Good Samples

- ▶ Representative of the Populations to be Generalized to
 - ▶ Balance on Covariates
 - ▶ Need *not* be the general population
- ▶ Random Selection of Respondents, but it's hard!
 - ▶ Stratified Random Sample
 - ▶ Quota Sampling, &era
 - ▶ Convenience Sampling

Words

- ▶ Population
- ▶ Parameter
- ▶ Sample Statistic

- ▶ Coming up next, Confidence Intervals, and Finally Inference

Words

- ▶ Population
 - ▶ Group to which we want to generalize
 - ▶ Parameter
 - ▶ Characteristic We are interested in
 - ▶ Religiosity; Democracy; &era
 - ▶ Sample Statistic
 - ▶ A Characteristic of a Sample
- ▶ Coming up next, Confidence Intervals, and Finally Inference