

POLS 095: Methods in Politics

Research design and causation

The story so far

1. Define concept clearly
2. Determine how to measure accurately
3. Choose variables to measure concept
4. Develop hypotheses

Today: Research design

Moving from hypothesis to test



Comparisons are key

Comparisons lie at the heart of virtually all science



Possible causes and alternative explanations

Can you think of alternative explanations for these phenomena?

1. As Congressional candidates raise larger sums of money, they become more likely to win elections.
2. Students who arrive late to class receive poorer grades.
3. As freedom of the press increases, states become less likely to perpetrate human rights violations



Gritty can.

Effects of negative campaigning

- What is the effect of negative campaign ads on election turnout?
- How might we go about studying this and seeking an answer?

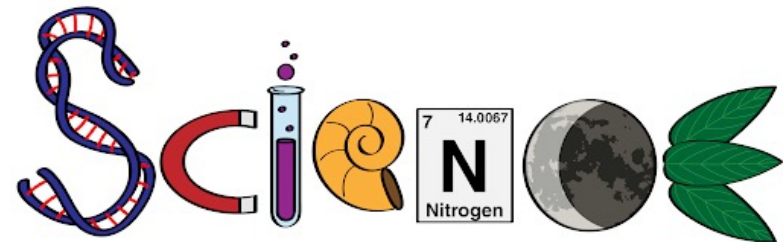


Research design

What is a research design?

Five key parts:

- 1.
- 2.
- 3.
- 4.
- 5.



Research design considerations

What factors influence the choice of design?

1. Goal of investigation
2. Practical limitations



Goals of research designs

At least four types of goals

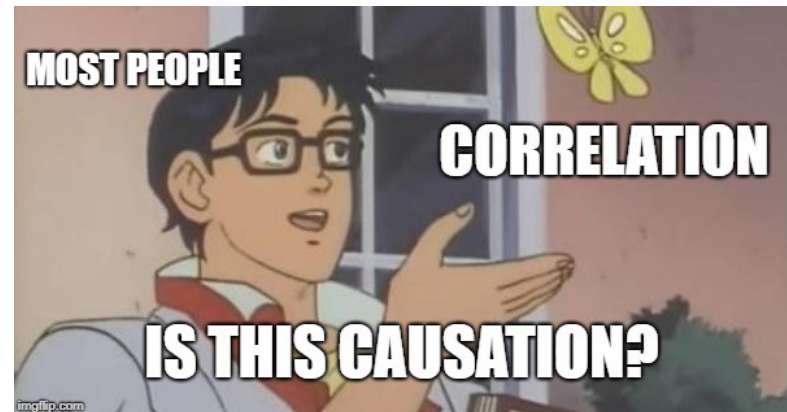
- 1.
- 2.
- 3.
- 4.



Four hurdles to inferring causality ($X \rightarrow Y$?)

Four rules of thumb

- 1.
- 2.
- 3.
- 4.



Four hurdles to inferring causality ($X \rightarrow Y$?)

1. Is there a plausible mechanism connecting them?
Does any explanation make sense?

Four hurdles to inferring causality ($X \rightarrow Y$?)

2. Can we rule out the possibility that $Y \rightarrow X$?

Four hurdles to inferring causality ($X \rightarrow Y$?)

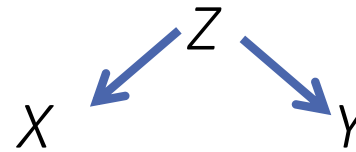
3. Do X and Y covary in an identifiable way?

Four hurdles to inferring causality ($X \rightarrow Y$?)

4. Can we eliminate any Z s related to X and Y that might cause Y ?

Four hurdles to inferring causality ($X \rightarrow Y$?)

If two variables, X and Y *move together*, i.e., are associated, correlated, interdependent, what possible reasons could there be for this relationship?



Others?

Types of research designs

Experimental study

Observational study



Experimental studies

Classical experimental design

Laboratory experiment

Survey experiment

Field experiment



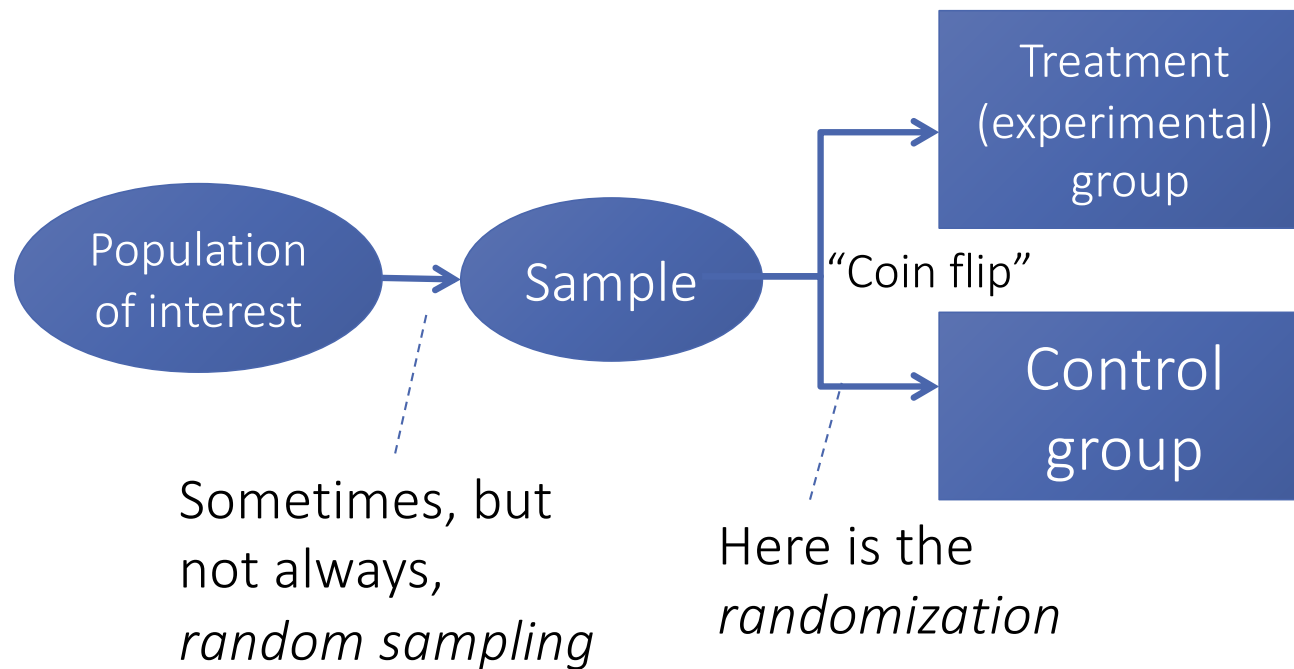
Stock image providers... thank you

The miracle of random assignment

- Randomization vs self-selection
- Randomization and characteristics of groups



Randomization process



Experiment: negative advertising

Q: Does negative political advertising reduce voter turnout?

Hypothesis: Exposure to negative political advertising will cause many to lose interest in politics and be less likely to vote.

Independent variable?

Dependent variable?



Experiment: negative advertising

What is the population of interest?

How do we recruit participants?

What does the protocol look like?



Experiment: negative advertising

1. Pre-test questionnaire
2. We tell participants we are studying television news
3. Each group watches 15-minutes of news
4. Advertisement
5. Each group again watches 15-min of news
6. Post-test questionnaire

Experiment: negative advertising

Suppose the results look like:

Group	Pre-test intention to vote	Post-test intention to vote
Experimental treatment (neg. ad)	70%	20%
Control	68%	66%

What should we infer?

Internal and external validity

What is internal validity?

What is external validity?



Observational studies

Experimental vs.
observational research

What is selection bias?



National borders are weird.

Observational studies

Two main types of observational studies

1. Natural experiments
2. Controlled comparison

