Political Science Scope and Methods

Introduction to Research Design and The Experimental Method

Introduction to Research Design

- Scientific method (again)
  - Theory development
    - What qualifies as a theory?
  - **Theory testing**
    - Positivist approach
  - Inductive vs. deductive theorizing

Some Terminology

- Dependent Variables (DV) and Independent Variables (IV)
  - Van Evera definition:
    - Theories are general statements that **describe and explain the causes or effects** of classes of phenomena. They are composed of causal laws or hypotheses, explanations, and antecedent conditions.
  - Alternative conception:
    - We explain particular phenomenon – our DV –as a function of specific explanations – our IVs.
  - Examples
  - Strategies

Terminology (continued)

- Internal vs. External validity
  - Internal validity: the "real effect."
  - External validity: "generalizability."
  - **Threats to validity**
    - Example (internal): School vouchers
    - Example (external): Social psychology

The Practice of Research

- Campbell and Stanley: Principles for Design
- Selecting a research plan
  - Threats to internal validity
  - Threats to external validity
- Think hard about the implications of design (including the things you can't control)

Threats to Validity

- Internal
  - History: Things happen
  - Maturation: Things happen even when things don't happen
  - Testing: Taking the test can have an effect
  - Instrumentation: Nature of measurement might change
  - Statistical Regression: Regression to the mean
  - Selection: Experimental group different than control group
  - Mortality: People die (or drop out)
  - Interaction: Things get complicated

Threats to Validity

- External
  - Interaction of Test and X: Taking test changes effect of treatment
  - Interaction of Selection and X: Both control and experimental group are different
  - Reactive Arrangements: Experimental setting is artificial

Bottom Line (76 pages of Campbell and Stanley later): Be Careful!

Testing theories

- Van Evera: 2 ways to test theories:
  - Experimentation
  - Observation
    - **Case studies**
    - "Large N" (statistical) analysis

The Practice of Experimentation

- Campbell and Stanley: The hard sell
- The causal inference movement in political science
- Limitation of experiments
  - Experimental work as the plutonic ideal
- Experiments are about control
  - Payoff in causal inference
  - Maximize internal validity (if do them correctly)
  - **Random Assignment**

Note: Random assignment ≠ random selection

Other Concerns

- Construct validity
  - Why does the treatment work?
  - Is the treatment what we say it is?

Experiments vs. Quasi Experiments

- Experiments: C&S – p.8: If you use random assignment, you don't need to worry about internal validity
- Quasi-Experiments: C&S – p. 40,56 – things are not so neat
  - Specific threats to worry about
  - Designs that control for all threats to validity might be hard to operationalize

Experiments

- Experimentation:
  - Lab experiments
    - Study of political cognition (Berinsky and Kinder)
    - Effects of ethnic diversity (Habyarimana et al.)
  - Field experiments
    - Effect of canvassing, telephone calls, and mailing on turnout (Green and Gerber)
    - Effectiveness of "franking" – baby books and ballots (Cover and Brumberg)
  - Natural Experiments
    - Effect of election observers on vote fraud (Hyde)

Kosovo Experiment

- Theory: Frames as stories
- Hypothesis: Organization of text should affect recall and choice
- Treatment: ?
- Measures: ?

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