The Basics of Social Science Research

Political Science 225
North Dakota State University

Generating Social Science Theories

1. Start with a question
2. Develop a theory or model
3. Derive specific hypotheses from the theory
4. Test the hypotheses with evidence
5. Evaluate the theory

Asking Questions

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- Identify an empirical puzzle
- Note a surprising event or regularity
- Build on current theory/expectations

Example: Hong Kong Protests

Potential questions?

Theory Building

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Definition

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- Story that explains puzzle
- General process that generates known facts
- Simplified picture of the world

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  - Concerned with how things *should* work
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- Objective Theory
  - Attempts to describe how things *do* work
  - Focuses on facts and observation

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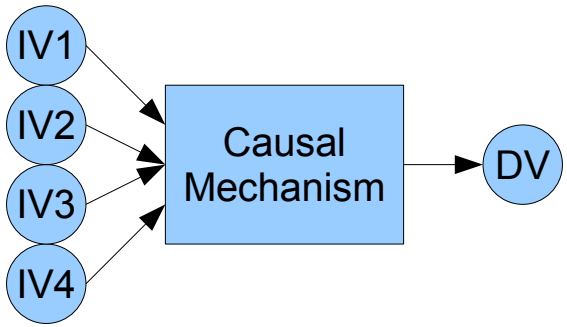

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- Accuracy

Before Next Time

- Go to `https://www.pbs.org/wgbh/frontline/film/battle-for-hong-kong/`
- Use the video as a jumping off point to ask a question leading to a social science theory.
- Before next class, post to the general channel on slack with a short paragraph containing:
  1. a motivating question,
  2. a basic theory composed of an independent variable, dependent variable, and very brief description causal mechanism.

Warmup Exercise

- Form groups, pick a group leader/recorder
- Choose one of the your simple theories
  - What is the unit of observation?
  - What are the different levels/possible values of the IV?
  - What are the levels/possible values of the DV?
  - What does the theory predict that level/value of the DV will be for each possible level/value of the IV?
  - Is the CM a causal mechanism or something else?

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  - Necessary condition: outcome cannot occur without the explanatory variable
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  - Deterministic causes
  - Probabilistic causes
  - Interaction

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  - Interaction
- Showing causation
  - Temporal order
  - Covariation
  - Rule out other explanations

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- Key to falsifiability
- Should not relate to the original puzzle

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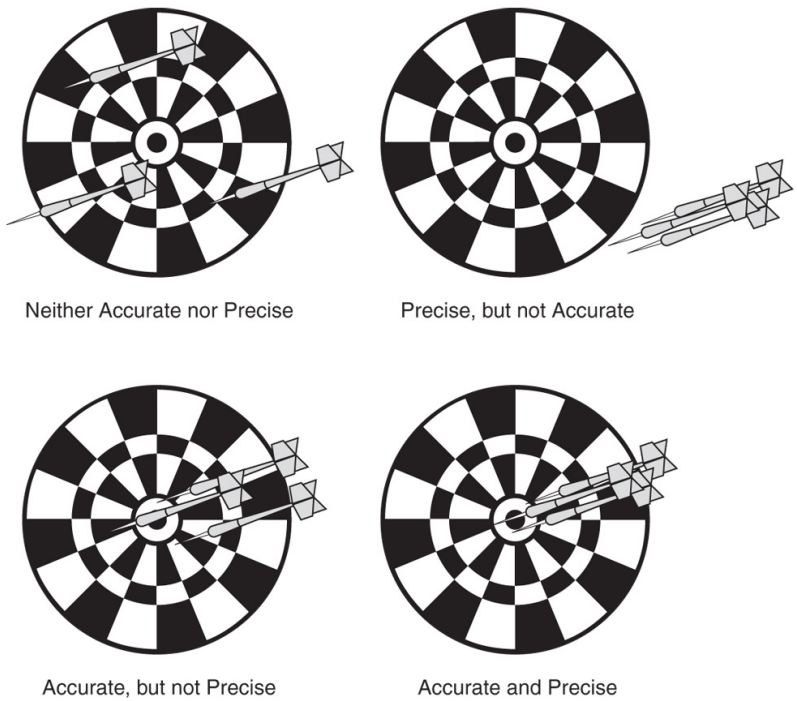

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This approach guards against *ex posto facto* argument but is very restrictive. You can't prove anything in (social) science.

Theory Evaluation

- Range of hypotheses supported
- Alternate explanations
- Endogeneity
- Critical tests
- Replication

Challenges of Causal Research

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  - Setting

Experiments

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- Low external validity
- Often infeasible or unethical

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Tricks to improve internal validity:

- Statistical controls
- Natural experiments
- Quasi-experimental designs

Case Study Analysis

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- Provide detail, context
- Low external validity
- Good for question and theory generation
- Useful for mechanism testing
- Deviant cases