

# 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

# Theory Building

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

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

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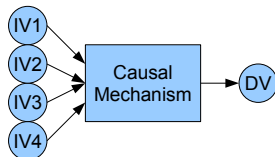
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  - Interaction
- Showing causation
  - Temporal order
  - Covariation
  - Rule out other explanations



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- Should not relate to the original puzzle

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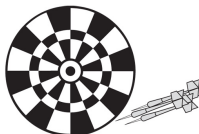
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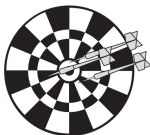
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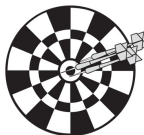
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This approach guards against *ex post facto* argument but is very restrictive. You can't prove anything in (social) science.



# Theory Evaluation

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

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  - Setting



# Experiments

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- High internal validity
- 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

# Exercise: No Child Left Behind

- Identify
  - IV
  - DV
  - Causal mechanism
  - Hypotheses
  - Operationalizations of IV and DV
- Evaluate
  - Testing strategy
  - Internal validity
  - Measurement quality & construct validity
  - External validity
- Suggest
  - Other testing strategies
  - Better operationalization(s)