

Building and Testing Political Science Theories

Department of Government
London School of Economics and Political Science

1 Finish Measurement

2 Theory

3 Preview Next Week

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Assessing Measurement Quality

- 1 Conceptual clarity
- 2 Construct validity
 - Convergent validity
 - Divergent validity
- 3 Accuracy and precision

Assessing Measures I

- Conceptual clarity is about knowing what we want to measure
- Sloppy concepts make for bad measures
 - Ambiguity
 - Vagueness

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- Sloppy concepts make for bad measures
 - Ambiguity
 - Vagueness
- Revise concept definition as needed

Assessing Measures II

- Construct validity is the degree to which a variable measures a concept¹

¹Note: Kellstedt and Whitten call this “content validity”. They use “construct validity” to mean whether a measure has predictive validity (i.e., that the measure is related to measures of other concepts that are theorized to be related).

Assessing Measures II

- Construct validity is the degree to which a variable measures a concept¹
- Construct validity is **high** if a variable is a measure of the concept we care about

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Assessing Measures II

- Construct validity is the degree to which a variable measures a concept¹
- Construct validity is **high** if a variable is a measure of the concept we care about
- Construct validity is **low** if a variable is actually a measure of something else

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Assessing Construct Validity

- Multiple measures!
- Convergence (Convergent validity)
- Discrimination (Discriminant validity)

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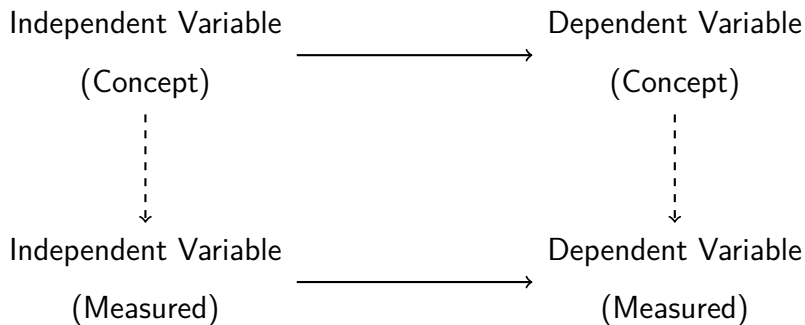
3 Preview Next Week

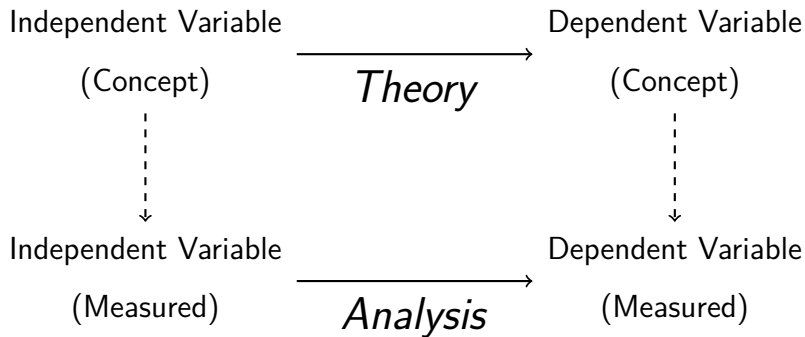
Scientific method

- 1 Research question(s)
- 2 Clarify the core concepts
- 3 **Develop theory**
- 4 Derive specific, testable hypotheses
- 5 Plan data collection
- 6 Gather data/evidence
- 7 Analyze data
- 8 Draw inferences

Key Points from Last Week

- 1 Theory is about concepts
- 2 Analysis is about measured variables
- 3 So our task as scientists is to:
 - Find observable implications of theory
 - Draw theoretical implications from measures





What is a theory?

- Kellstedt and Whitten's definition:²
A tentative conjecture about the causes of some phenomenon of interest

²Kellstedt and Whitten, p.3

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- Another way of saying this:
An argument that attempts to explain how concepts are causally related

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Generating Theory I

- One way to theorize is to reason *inductively*
- Induction works by drawing generalities from specific observations
- Sometimes called “bottom-up” theorizing

Generating Theory II

- An alternative way of developing theory is through *deduction*
- Deduction begins from general, assumed principles/axioms to reach more specific observable realities

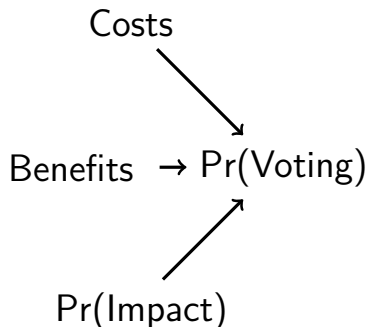
Generating Theory II

- An alternative way of developing theory is through *deduction*
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- Common example: Rational choice theory

The Calculus of Voting

Theory: Voting is explained by 3 factors

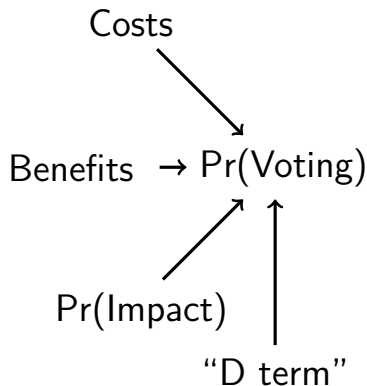
- Costs of voting
- Benefits from preferred alternative winning
- Probability of impacting result



The Calculus of Voting

Theory: Voting is explained by 4 factors

- Costs of voting
- Benefits from preferred alternative winning
- Probability of impacting result
- Benefits from voting *per se*



Generating Theory III

- “The Calculus of Voting” is a *rational choice* theory
 - Assumes utility maximization is the driver of all behaviour
 - Understanding phenomena is a matter of figuring out utility structures, especially those created by institutions

Aside: Assumptions

If a theory require assumptions, is that
theory credible?

Generating Theory III

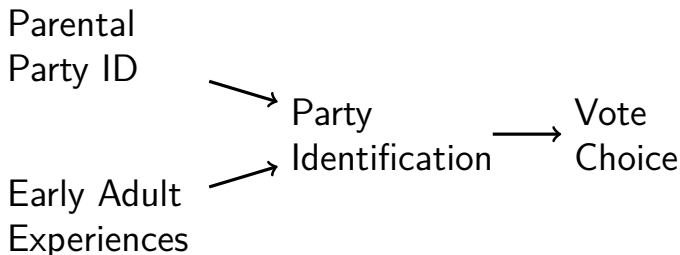
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Generating Theory III

- “The Calculus of Voting” is a *rational choice* theory
 - Assumes utility maximization is the driver of all behaviour
 - Understanding phenomena is a matter of figuring out utility structures, especially those created by institutions
- Not the only broad theoretical paradigm

The Michigan Model

Theory: Vote choice is explained by long-standing partisan identification, which is in turn shaped by early socialization.



Induction vs. Deduction?

- Induction and deduction are both integral to science
- Theory testing and theory building both require observation

Theory Generation in Practice

As you theorize an explanation for some phenomenon, you will draw on:

- General principles
- Extant theory
- Specific evidence

What makes for a good theory?

- Truth
- Falsifiability
- Relevance
- Coherence
- Generality
- Parsimony

Generality & Parsimony

Think for 90 seconds about each of these principles:

- Generality: Theories that can explain more are preferred over theories that can explain less
- Parsimony: Simple theories are preferred over complex theories

Are these principles defensible?

Are they any good?

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Preview

- Drawing inferences requires tests
- Testing theories requires observation of reality
- Focus on two tasks:
 - Generating specific “observable implications” of theories
 - Discuss how to distinguish between rival theories

