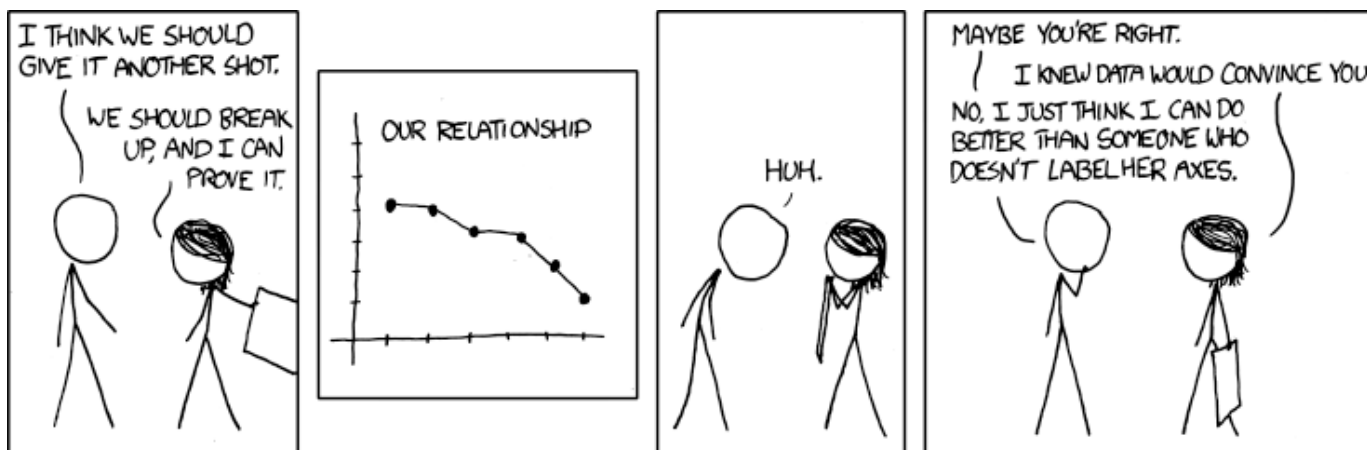


Research Methods for Political Science

MT week 3, lecture 1

Variables, hypotheses and measurement



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Variable

- A **variable** is a characteristic that takes on different values from one case to another or, for a given case, from one time to another.
- (as opposed to a constant)
- E.g. gender (person), democratic (state), number of members (party).

Variable

A variable...
varies

Independent and dependent variables

- Dependent variable: the characteristic you wish to explain (outcome variable)
- Independent variable: the explanation or one of the explanations (explanatory variable)

E.g.

IV	→	DV
GDP		Level of democracy
Political knowledge		Voting (turnout) in an election
Level of education		Political knowledge

A researcher studies the income gap between men and women.

What is the independent variable?

1. Income
2. Sex
3. Both
4. Neither

A study finds that people who watch public TV get more interested in politics. What is the dependent variable?

1. Watching public TV
2. Interest in politics
3. Both
4. Neither

One might think of an independent variable as:

1. The cause
2. The effect

Covariation or causation?

- Covariation: two or more variables tend to change together (direction is unknown)
- Causality: change in one or more variables leads to or 'forces' changes in one or more other concepts or variables.

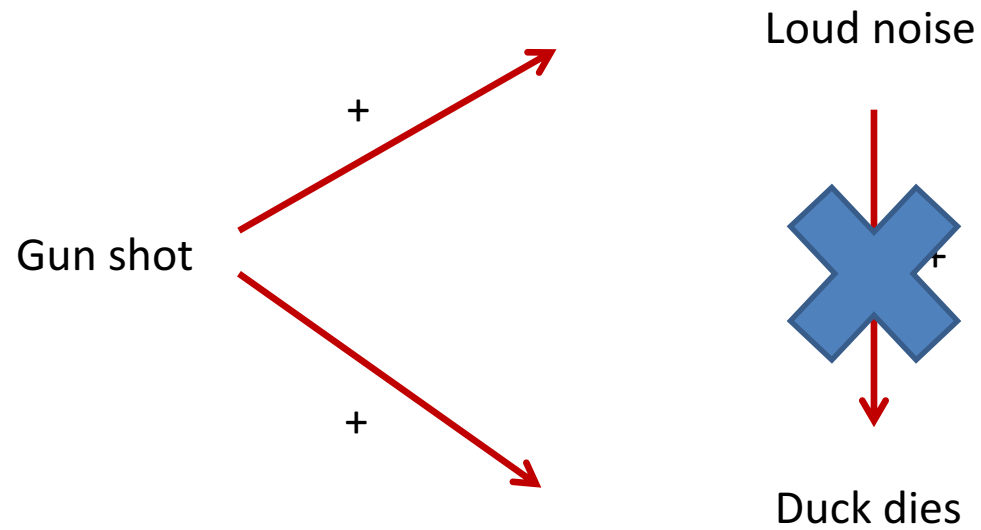
Causation

- Cause and effect must covary
- Cause must *precede* the effect
- Causal linkage
- Account for *spurious relationships*

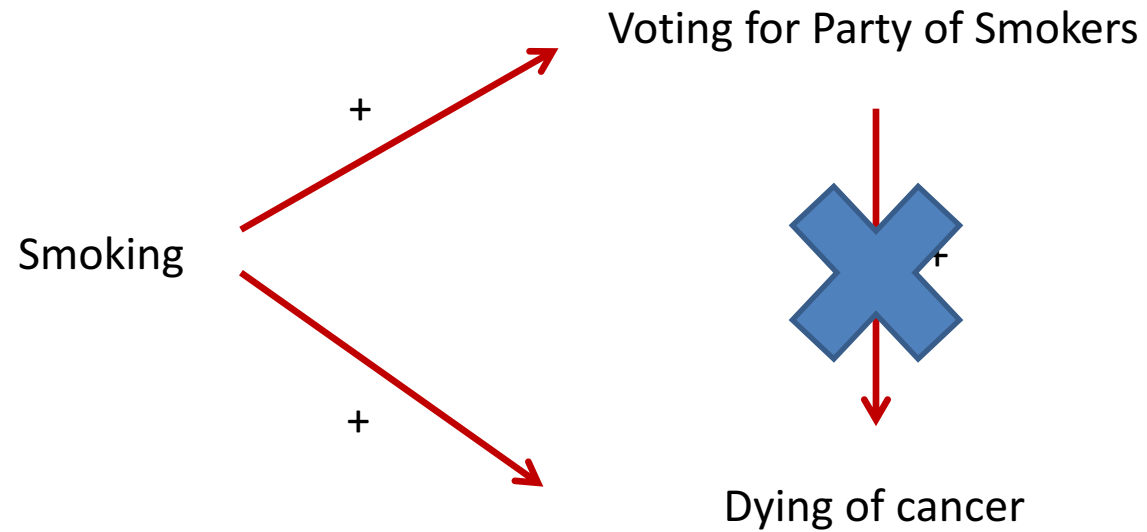
The Fundamental Problem of Causal Inference

- Inability to observe counterfactuals
- Close substitutes
- Randomization
- Statistical adjustment

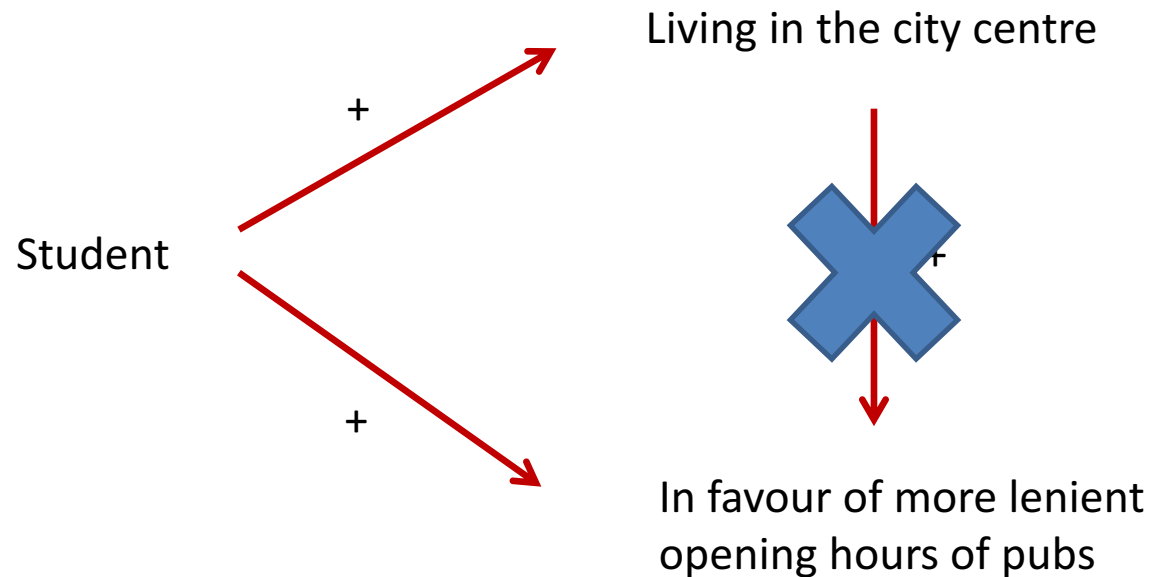
Spurious relationship



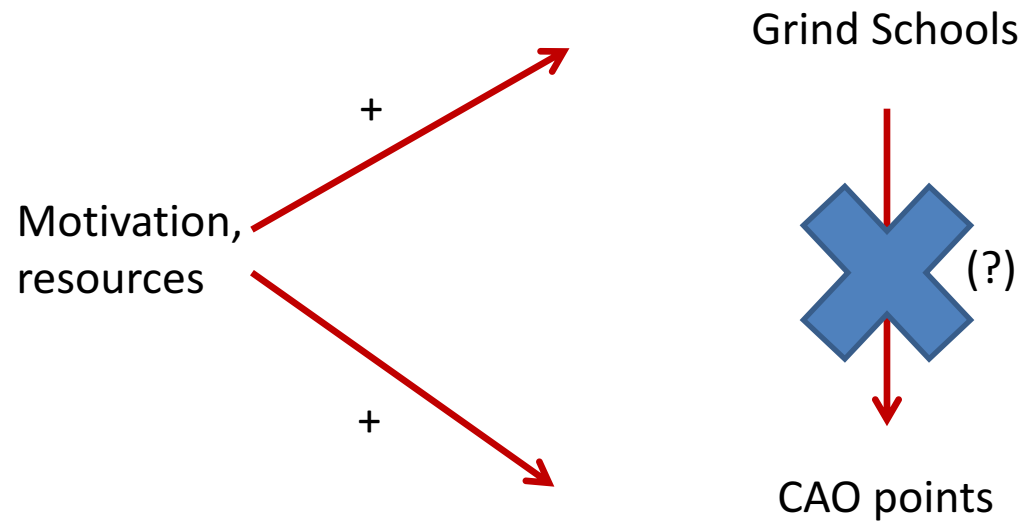
Spurious relationship



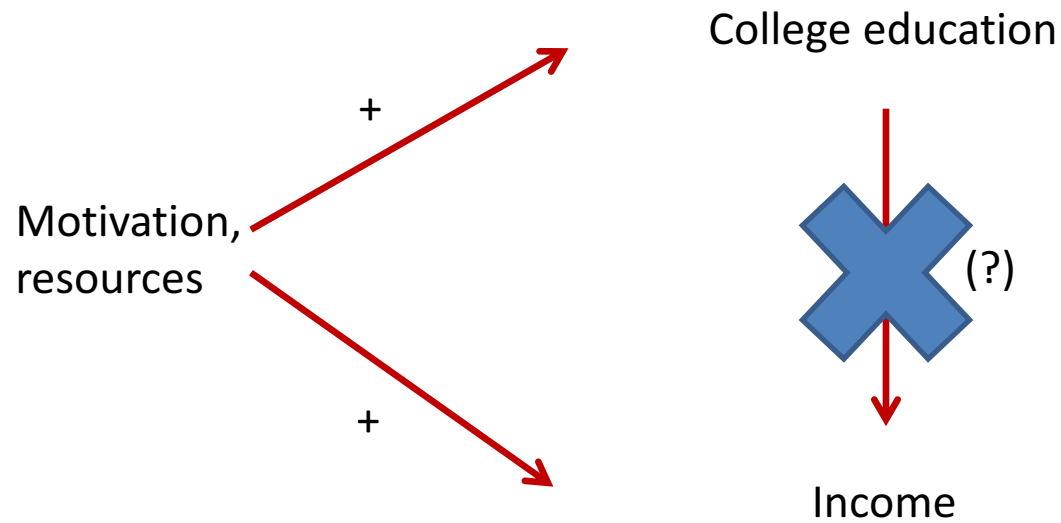
Spurious relationship (II)



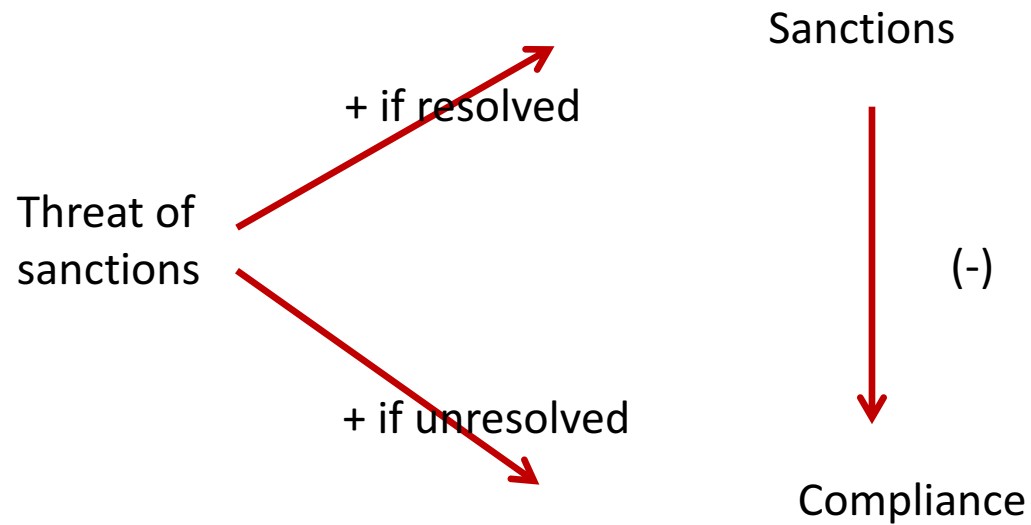
Spurious relationship (III)



Spurious relationship (IV)



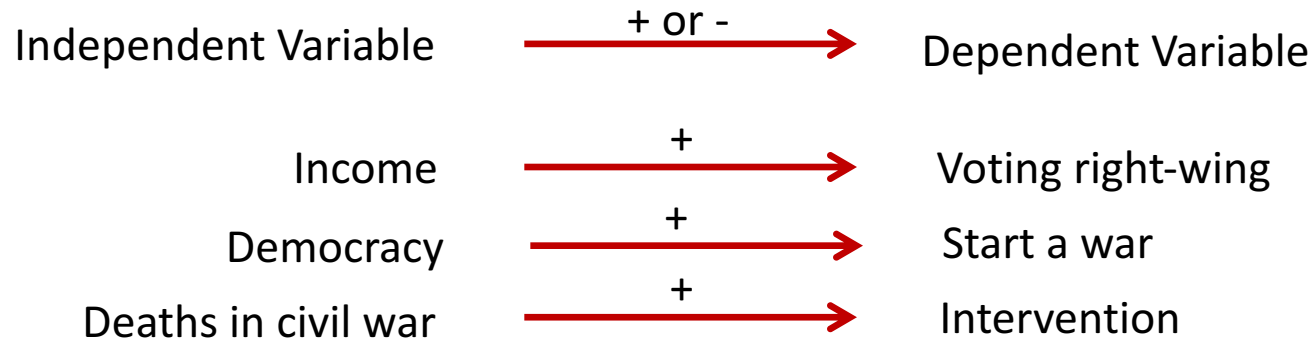
Spurious relationship (IV)



Hypotheses

- Testable statements derived from a theory
- Not necessary, but common in quantitative research
- Usually a *covariational* logic:
 - The higher X, the higher Y.
- Two variables
- Mentions the direction of their relationship

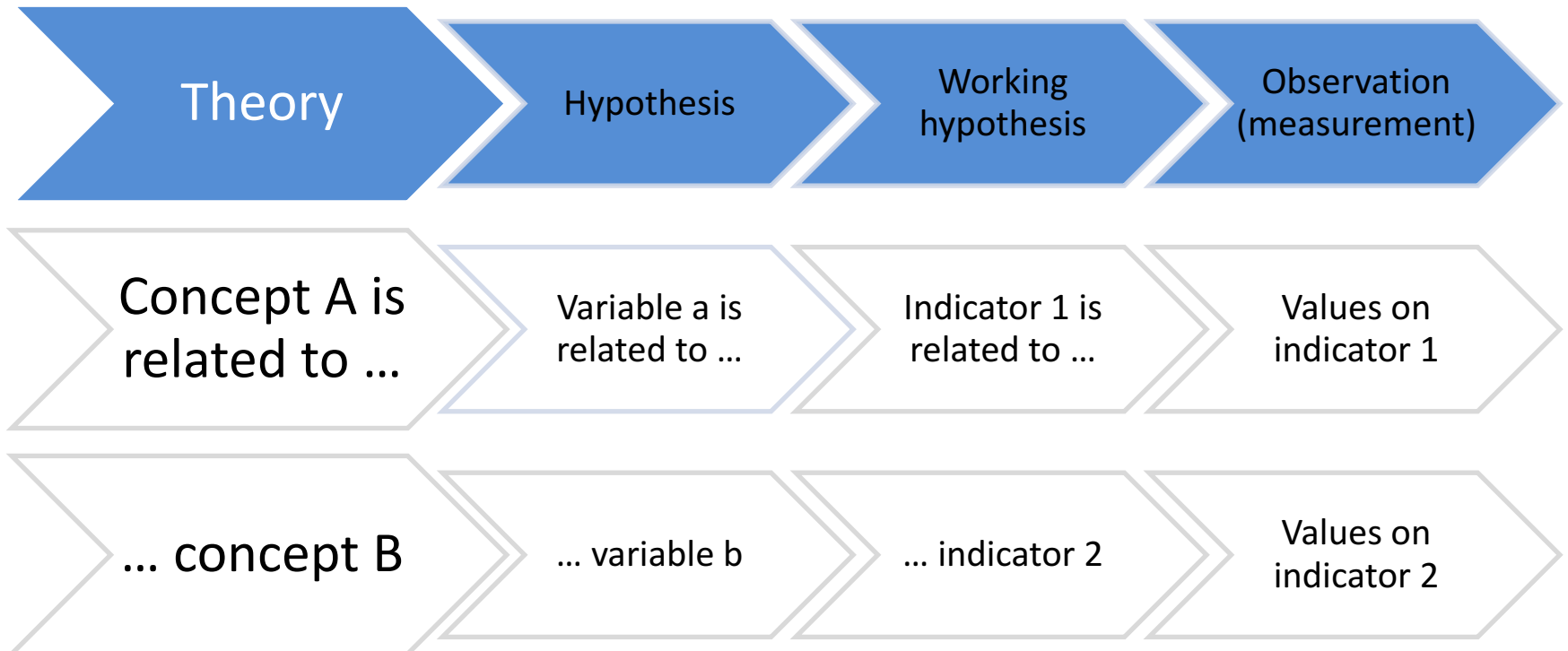
Hypotheses (II)



Hypotheses (III)

- R of Ireland is a nice country.
- R of Ireland is a nicer country than the UK.
- Political parties keep their promises.
- Politicians make more promises than they can fulfil.

Operationalisation



Source: Manheim et al. (2012), p. 65

Example

Concept: *Parliamentary activity*



“The degree to which MPs make use of the instruments they have at their disposal.”

Example (II)

- Variable: number of parliamentary questions asked
- Indicator: mean number of PQs per sitting day

Example

- Freedom House *Freedom in the World 2010*
- Concept: 'freedom'
- Variables: political rights & political liberties
- Indicators: checklists of 10 & 15 indicators

- Political interest
- Hegemony

In your work

- Importance of finding a **puzzle**.
 - Ideally A `why' type of questions
- That puzzle leads to a theory, which leads to a hypothesis.
- Elevator pitch
 - Puzzle: Why do some wars last longer than others?
 - Theory: I argue that third parties alter the balance of power and delay learning in a war
 - Hypothesis: Civil wars in which third party intervened tend to last longer
 - Operationalization: I use data on interventions from xyz...

Questions you must be able to answer

- What is your motivating question?
- What is your DV? IV?
- How do they vary?
- What is your theory?
- What are your hypotheses?