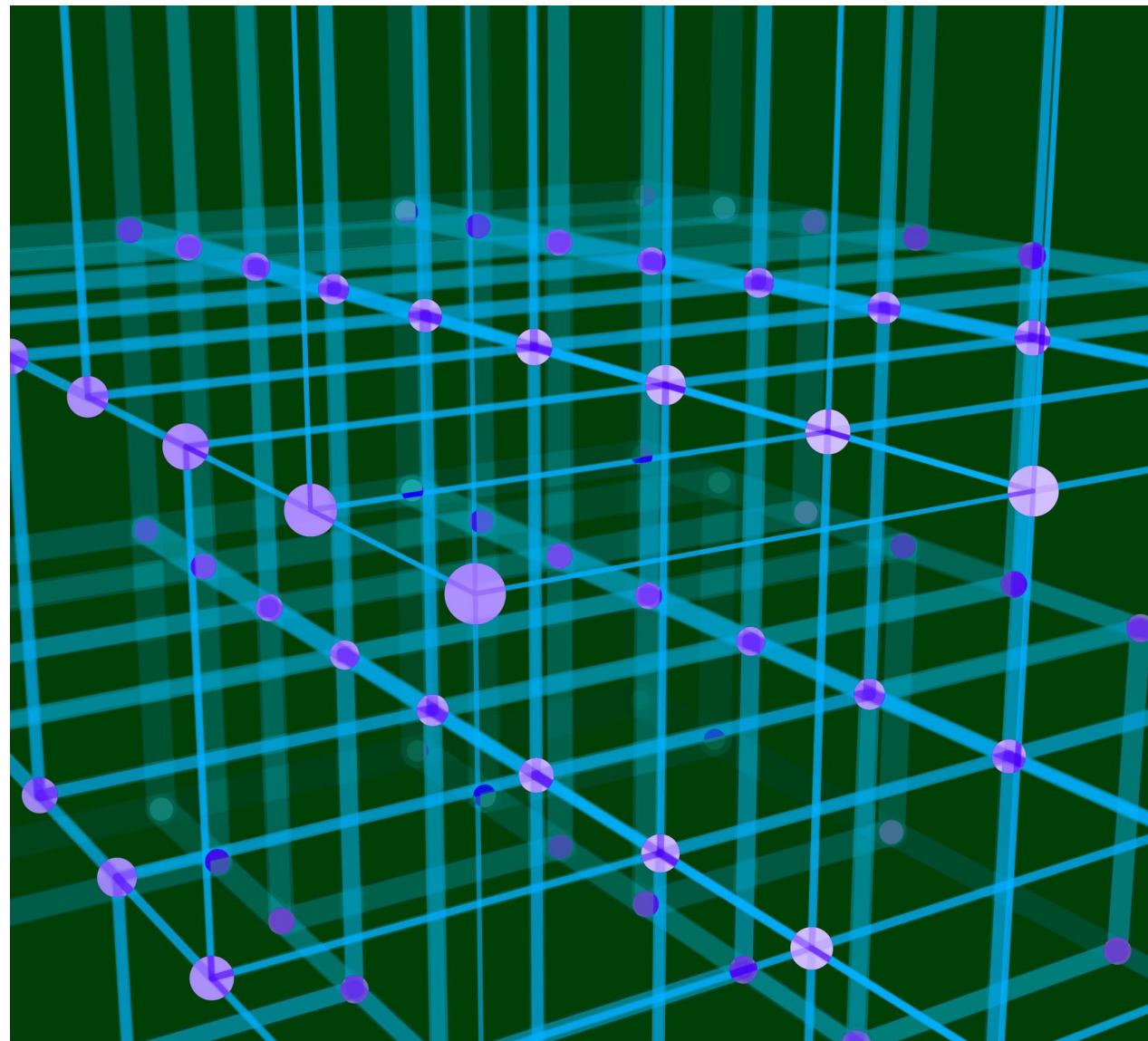
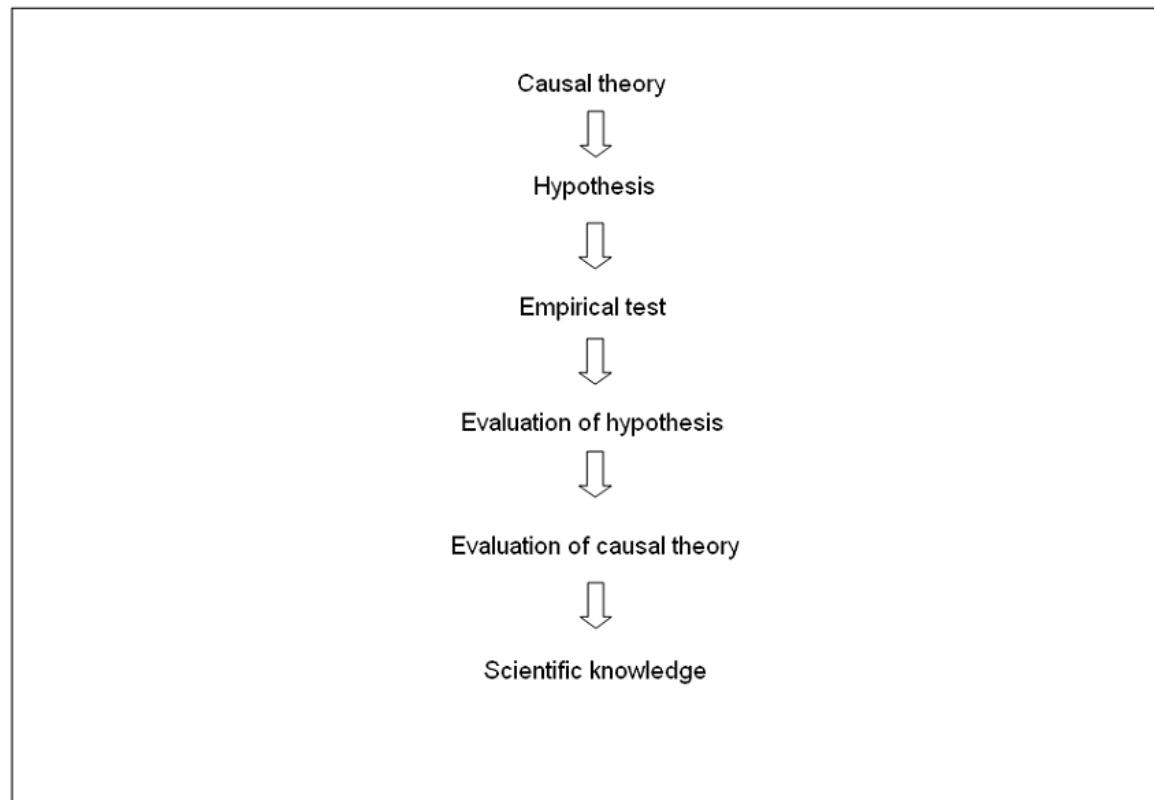


THEORY

February 1, 2022
POLS 095
Drake University



THE ROADMAP TO SCIENTIFIC KNOWLEDGE



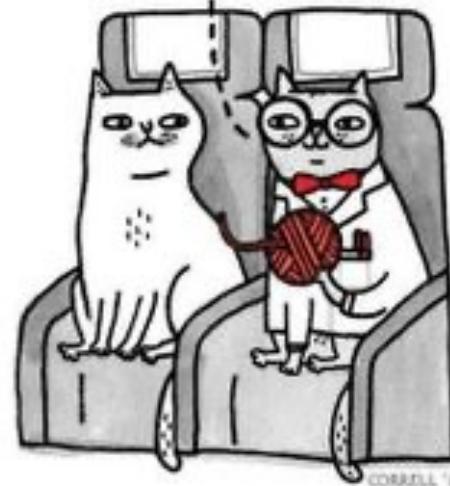
WHAT IS A THEORY?

A causal claim

Dependent variable (Y)

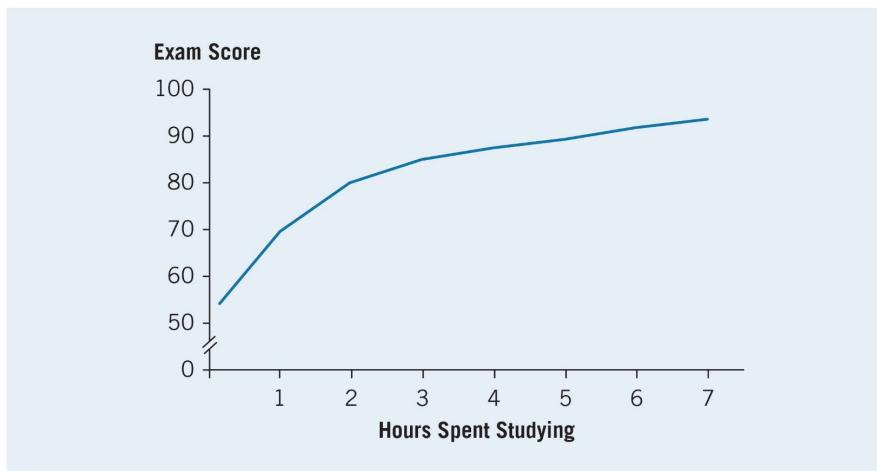
Independent variable (X)

MY MAIN AREA OF EXPERTISE
IS, OF COURSE, STRING THEORY.



EXPLAINING VARIATION

Figure 3-4 Curvilinear Relationship between Exam Score and Hours Spent Studying



Note: Hypothetical data.

Table 3-1 Cross-tabulation of Social Security Opinions, by Partisanship

| Opinion on Social Security Spending | Party Identification | | | Total |
|-------------------------------------|----------------------|-------------------|-------------------|-------------------|
| | Democrat | Independent | Republican | |
| Increase | 68.9% (883) | 58.3% (764) | 49.3% (498) | 59.5% (2,145) |
| Keep same or decrease | 31.1% (399) | 41.7% (547) | 50.7% (512) | 40.5% (1,458) |
| Total | 100.0% (1,282) | 100.0% (1,311) | 100.0% (1,010) | 100.0% (3,603) |

Source: 2016 American National Election Study.

WHAT IS A THEORY?

What is the dependent variable?

What is the independent variable?

How can we make this a theory?

Race and death penalty attitudes (2010 GSS)

| | Favor | Oppose |
|----------|-----------|--------|
| Black | <u>42</u> | 48 |
| Hispanic | <u>51</u> | 45 |
| White | <u>70</u> | 24 |

THE COUNTERFACTUAL

World 1:

Daniela is a Republican



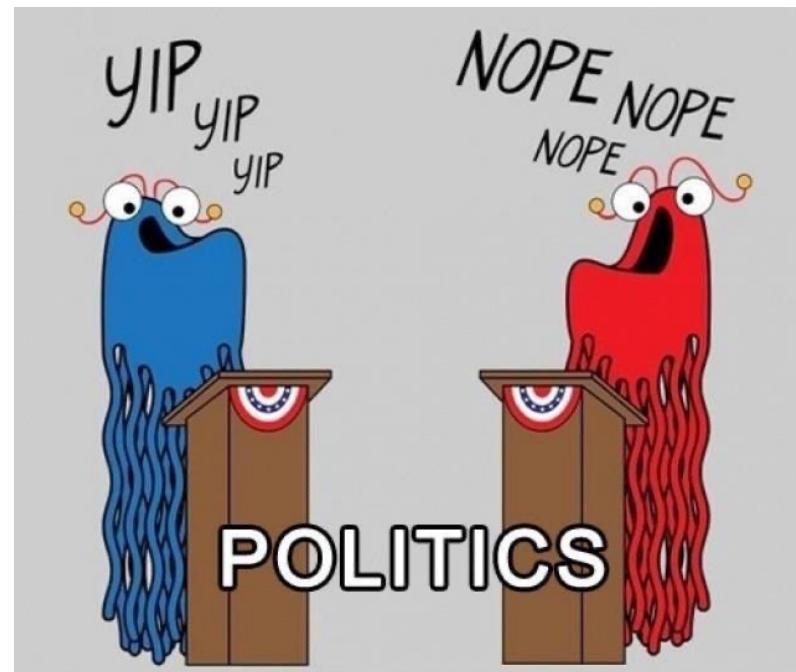
World 2:

Daniela is NOT a Republican



GOALS OF A THEORY

- Invokes a causal mechanism
- Create falsifiable predictions

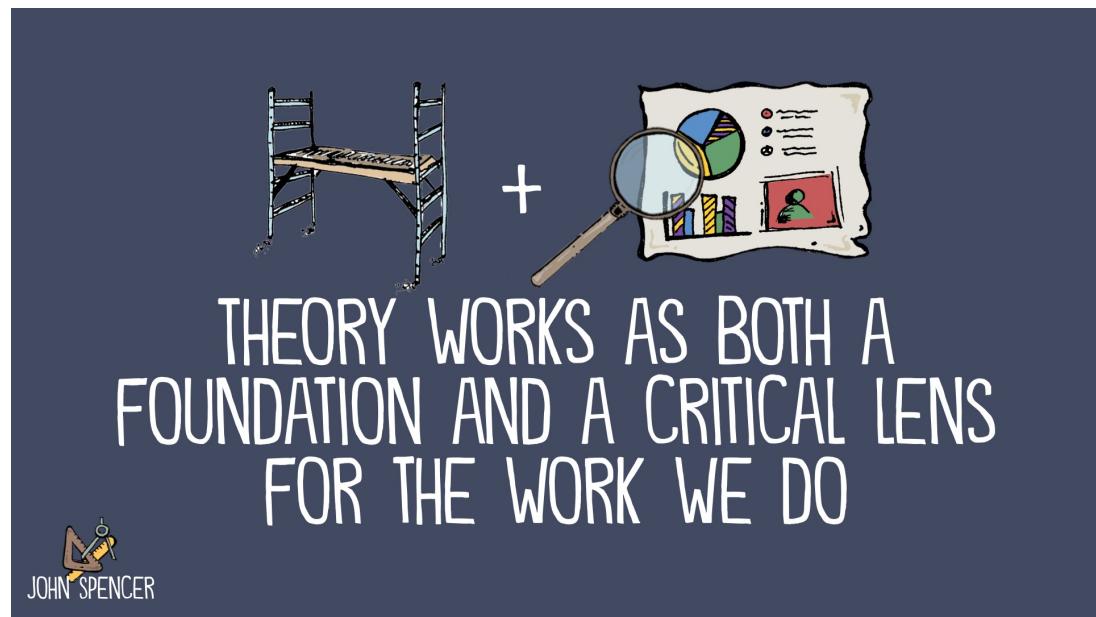


GOALS OF A THEORY

Generality

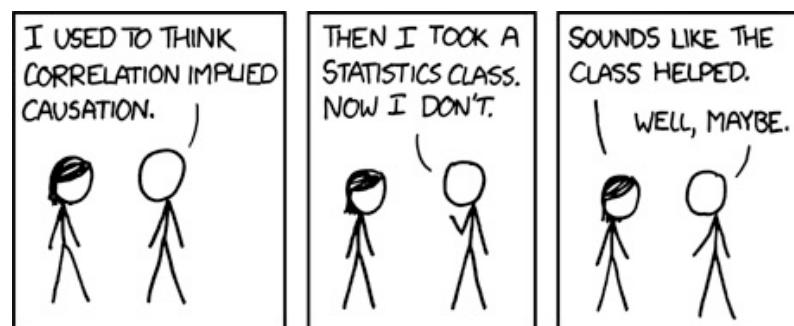
Parsimony

Hopefully useful



SOCIAL SCIENCE THEORIES

Probabilistic
“On average...”



A THEORY IS *NOT*...

A perfect description of the real world!

The last word!

THEORY OVERVIEW

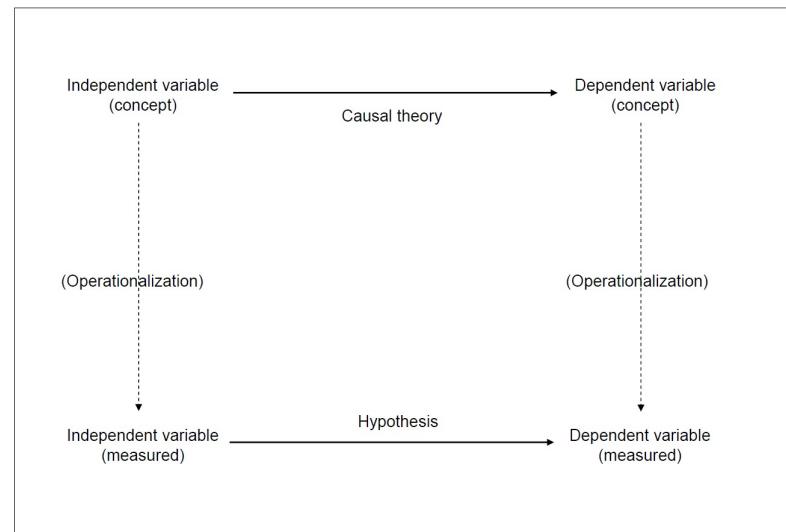
Generate testable, causal hypotheses

Generalizable

Parsimonious

Probabilistic

Cumulative



EXERCISES

1. Suppose you wanted to understand why incumbents (elected officials already in office) are so frequently re-elected. What variables should you collect and measure to test a hypothesis regarding incumbency?

Unit of analysis: Members of Congress (MC reelected = 1, not = 0) OR Congress Incumbency Rate (%)

Incumbency = Name recognition + Resource availability + District Partisanship + Engagement + Status

2. Voter turnout in the United States varies dramatically from one state to the next. List at least three independent variables that might explain the difference in voter turnout (the dependent variable).

Turnout%_S = White%_S + Access + SwingState_S + IDLaws_S +

LIGHT ALGEBRA REVIEW

$$\frac{\frac{1}{2}(10-4)^2}{\frac{2}{3}} =$$

$$\frac{\frac{1}{2}(6)^2}{\frac{2}{3}} =$$

$$\frac{\frac{1}{2}(36)}{\frac{2}{3}} =$$

$$\frac{18}{\frac{2}{3}} =$$

$$\frac{18}{1} \times \frac{3}{2} =$$

$$9 \times 3 = 27$$

LIGHT ALGEBRA REVIEW

Solve for y : $3(y - 2) = 27$

- Divide both sides by a constant to simplify (3)
 - $(y - 2) = 9$, subtract 9 from both sides to zero out the right
 - $(y - 2) - 9 = 0$; same as $y - 2 - 9 = 0$
 - $y - 11 = 0$
 - $y = 11$