

Week 4: Theories, Hypothesis framing and Testing

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Causality

1. Temporal Precedence
2. Empirical Correlational Pattern
3. Causal Theory
4. No other plausible causes – omitted variables, intervening variables.

These are necessary conditions, but are by NO means sufficient to establish convincing causality in all cases.

Why Causality is Tough in Political Science

- ▶ Observational Data
- ▶ Causal Theory? REEEEEALLY? The Democratic Peace?
- ▶ Other Causes

Cross-Tabs

Sum across the independent variable.

Sum across the independent variable.

The independent variable could be in the rows or the columns.

Sum across the independent variable.

Our hypotheses are the testable implications of our theories. If we want to *Say Anything* (John Cusack?) about our theories (aka, they're not wrong yet) we need to be able to judge our hypotheses.

Cross-Tabs, A Situation

	Men	Women	
Snookie	200	175	
The Situation	100	300	

Cross-Tabs, A Situation

	Men	Women	
Snookie	200	175	NO!
The Situation	100	300	NO!
	300	475	

	Men	Women	
Snookie	$\frac{200}{300} = 66\%$	$\frac{175}{475} = 36\%$	NO!
The Situation	$\frac{100}{300} = 33\%$	$\frac{300}{475} = 63\%$	NO!
	300	475	

Three Ways in College. They're called Cross-Tabs

Imagine we are examining the relationship between **Race & Trust in Government**.

	White	Black	Total
Can Trust	595	45	640!
Can't Trust	820	208	1028
Total	1415	253	1668

If we are interested in making a causal claim about this, what might be a problem?

Controlled Comparisons and Omitted Variables

Trust Recoded * Race Recoded * EDUC Recoded into Two Categories Crosstabulation

EDUC Recoded into Two Categories				Race Recoded		
				White	Black	Total
0-12 Years	Trust Recoded	Can Trust	Count	203	14	217
			% within Race Recoded	32.3%	9.3%	27.8%
	Cannot Trust	Count	426	137	563	
		% within Race Recoded	67.7%	90.7%	72.2%	
	Total	Count	629	151	780	
		% within Race Recoded	100.0%	100.0%	100.0%	
13+ Years	Trust Recoded	Can Trust	Count	392	31	423
			% within Race Recoded	50.1%	31.3%	48.0%
	Cannot Trust	Count	391	68	459	
		% within Race Recoded	49.9%	68.7%	52.0%	
	Total	Count	783	99	882	
		% within Race Recoded	100.0%	100.0%	100.0%	

Continuous Variables

Try and make a cross tab for a continuous variable. How'd that work?

For summary Tables, there is a more specific format:

- ▶ In the rows, Independent Variables
- ▶ In The Column Heading, Dependent Variables
- ▶ We can make *univariate* or *bivariate* summary tables.

▶ Army

- ▶ Average Age: 32
- ▶ Average Income: \$50,000
- ▶ Average Obama Feeling Thermometer: 32
- ▶ Average Feeling Thermometer toward Homosexuals: 20
- ▶ Number: 500,000

▶ Navy

- ▶ Average Age: 31
- ▶ Average Income: \$32,000
- ▶ Average Obama Feeling Thermometer: 35
- ▶ Average Feeling Thermometer toward Homosexuals: 40
- ▶ Number: 200,000

▶ Marines

- ▶ Average Age: 26
- ▶ Average Income: \$22,000
- ▶ Average Obama Feeling Thermometer: 05
- ▶ Average Feeling Thermometer toward Homosexuals: 01
- ▶ Number: 20,000

Additive and Interactive Relationships

See Demo