Basic Concepts

- Purpose of Science:

  exploration, description, explanation

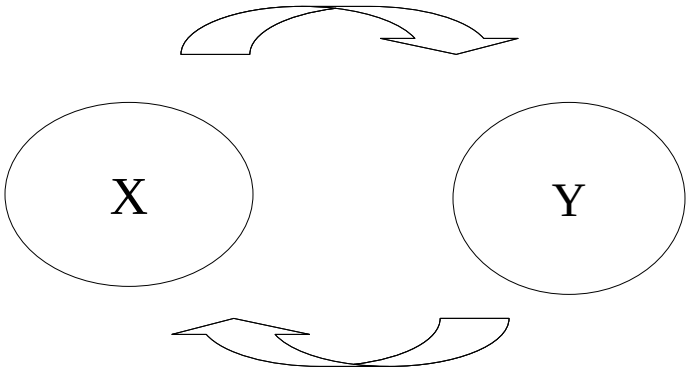
- Attributes:

  descriptive characteristics

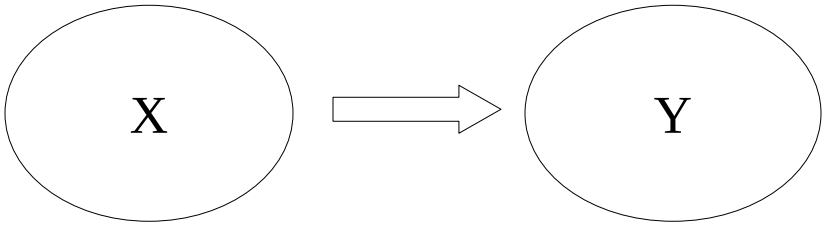
- Variables:

  logical groupings of attributes

Association



Causality



Independence model
(hypothetical)

Percentage Supporting Abortion, by Education Level		
	Low	High
Support	50	50
Oppose	50	50
Total	100	100
N	( )	( )

Positive association
(hypothetical)

Percentage Supporting Abortion, by Education Level		
	Low	High
Support	40	80
Oppose	60	20
Total	100	100
N	( )	( )

Negative association
(hypothetical)

Percentage Supporting Abortion, by Education Level		
	Low	High
Support	80	40
Oppose	20	60
Total	100	100
N	( )	( )

Units of Analysis

Babbie, p. 97:

"Categorizing possible units of analysis may make the concept seem more complicated than it needs to be. What you call a given unit of analysis—a group, a formal organization, or a social artifact—is irrelevant. **The key is to be clear about what your unit of analysis is."** (my emphasis)

Units of Analysis (n=4)

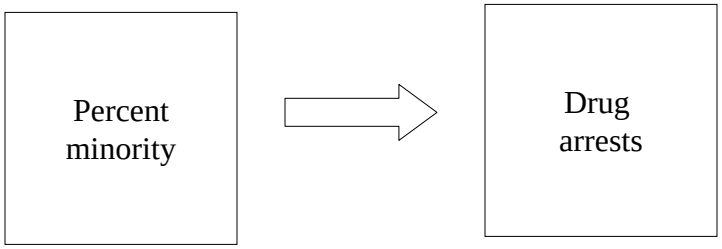
- Individual: attributes of people
- Social groups: populations of people
- Formal organizations: organizations with formal structure, rules, charter
- Social artifacts: social objects

What's the Unit of Analysis?
(what or whom is studied?)

1) Sex and political attitudes
2) Car brand and crash statistics
3) Proportion transient and reported burglaries
4) Size of firm and percent of employees who are minority
5) Percent democrats in a congressional district and number of social programs
6) Support of oil companies for environmental causes and amount of oil spilled per year

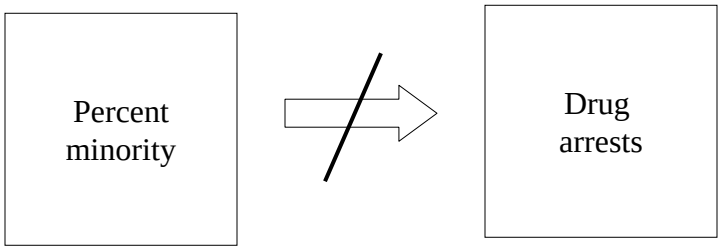
Ecological Fallacy
(confounding units of analysis)

Unit of Analysis = social group (city)



Ecological Fallacy
(confounding units of analysis)

Unit of Analysis = social group (city)



Moral: Don't move down to lower unit of analysis and make causal argument.

Timing of data collection and causality

- Cross-sectional: snapshot, can't infer causality
- Longitudinal studies: helps with causality
  - Trend studies
  - Cohort studies
  - Panel studies

Conceptualization (Basic definitions)

- Concept: mental images
- Conceptualization: specifying precisely what we mean by our concepts
- Interchangeability of indicators: evaluating multiple indicators of concepts

Alternative description

Assigning definitions:

✓Real definition: concepts are not real

✓Nominal definition: definition assigned

✓Operational definition: specific definition

✓Reification: danger of thinking our concepts are real

Miller and Stark's religiousness

- *Concept*: religiousness
- *Nominal definitions*: church attendance, belief in life after death, denominational loyalty, frequency of prayer
- *Operational definitions*:

  see GSS Codebook for questions

  Sample: General Social Survey

Miller and Stark's findings

Gender and Religiousness Over a Generation (U.S.)		
Religiousness	Year (t1)	Year (t2)
Church attendance	.19** (1972)	.18** (1998)
Belief in life after death	.12* (1973)	.12** (1998)
Denominational loyalty[1]	.19** (1974)	.17** (1998)
Frequency of prayer	.37** (1983)	.33** (1998)

Source: General Social Surveys. Correlations (gamma) with gender.

[1]Survey question: "Would you consider yourself a strong [Lutheran, Catholic, etc.] or not very strong?" *p<.05; **p<.001

Miller and Stark, AJS, May, 2002

REMEMBER!

Effect = noun
Affect = verb

Operationalization: developing indicators

Operationalization:

- process of developing operational indicators (actual measurement)

Responses to questions:

- must be exhaustive (exhaust every possible response)
- must be mutually exclusive (responses must not overlap)

Range of variation:

- yes/no or degree of response

Levels of measurement (n=4)

- ✓Nominal: categorical responses
- ✓Ordinal: rank-ordered responses
- ✓Interval: standard interval between responses
- ✓Ratio: interval responses with true zero point

Evaluating religiousness

- GSS Codebook:
  Church attendance
  Belief in life after death
  Denominational loyalty
  Frequency of prayer

Guidelines for developing questions

- Exhaustive & mutually exclusive
- Open- vs. closed-ended
- Brief and clear
- No double-barrelled
- Relevance
- No negative items
- No biased items
- No socially desirable questions

Reliability and validity
(evaluating the adequacy of indicators)

Reliability:

✓how consistent is the indicator?

Validity:

✓does indicator measure concept?

Modes of data collection

- Classical experiment
- Field research
- Content analysis
- Analysis of existing data
- Survey research
- In depth interviewing