Basic Concepts

• Purpose of Science:
  exploration, description, explanation

• Attributes:
  descriptive characteristics

• Variables:
  logical groupings of attributes

Association

X

Y
Causality

Independence model
(hypothetical)

<table>
<thead>
<tr>
<th>Percentage Supporting Abortion, by Education Level</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Oppose</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>N</td>
<td>(</td>
<td>(   )</td>
</tr>
</tbody>
</table>
### Positive association (hypothetical)

<table>
<thead>
<tr>
<th>Percentage Supporting Abortion, by Education Level</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>Oppose</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>N</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

### Negative association (hypothetical)

<table>
<thead>
<tr>
<th>Percentage Supporting Abortion, by Education Level</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>80</td>
<td>40</td>
</tr>
<tr>
<td>Oppose</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>N</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>
Units of Analysis

“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
Ecological Fallacy
(confounding units of analysis)

Unit of Analysis = social group (city)

Percent minority → Drug arrests

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
Granovetter’s “strength of weak ties”

- **Concept:** strength of ties
- **Nominal definition:** frequency of contact with friend who passed along job information
- **Operational definition:** How often did you see the contact around the time he/she passed on the job information?
  1) Often (at least twice a week)
  2) Occasionally (greater than once a year, but less than twice a week)
  3) Rarely (once a year or less)

**Sample:** people who recently found jobs through contacts

---

**REMEMBER!**

Effect = noun
Affect = verb