Chapter 4

Research Design

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Key Terms

Alphabetical List:
- cohort study
- correlation
- cross-sectional study
- ecological fallacy
- longitudinal study
- panel study
- reductionism
- social artifact
- spurious relationship
- trend study
- units of analysis

Structured List:
- cross-sectional study } opposing
- longitudinal study
  - trend study } parallel
  - cohort study
  - panel study
- ecological fallacy vs. reductionism } opposing
- units of analysis } nested
  - social artifact
- correlation } nested
  - spurious relationship

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Chapter Outline

- Three Purposes of Research
- The Logic of Nomothetic Explanation & Necessary and Sufficient Causes
- Units of Analysis
- The Time Dimension
- How to Design a Research Project
- The Research Proposal
- The Ethics of Research Design

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Three Purposes of Research

1. Exploration
2. Description
3. Explanation

Additional Key Terms

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Exploratory Studies

- Satisfy researcher's curiosity and desire for better understanding.
- Test the feasibility of undertaking a more extensive study.
- Develop methods to be employed in a subsequent study.

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Descriptive Studies

- To measure and report precisely some characteristics of a population under study (i.e., "study population").
- Often accomplished through a random sample of the study population.
- To answer the "WHAT's SO" question.

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Explanatory Studies

- To discover and report the relationships among different aspects (i.e., variables) of the phenomenon under study.
- To answer the “WHY” question.

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Nomothetic and Ideographic Models

- The nomothetic model tries to find independent variables that account for the variations in a given phenomenon (i.e., dependent variable).
- The idiographic model focuses on a complete, in-depth understanding of a single case.

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Criteria for Nomothetic Causality

1. The variables must be correlated.
2. The cause takes place before the effect.
3. The variables are nonspurious.

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Correlation

- A relationship between two variables such that:
  - changes in one are associated with changes in the other
  - attributes of one are associated with attributes of the other.
- Correlation does not constitute a causal relationship between the two variables, but it is one criterion of causality.

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Spurious Relationships

- Relationships that aren't genuine.
- A coincidental statistical correlation between two variables, shown to be caused by some third variable.

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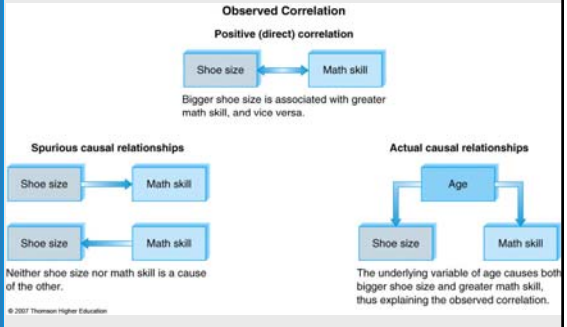
An Example of Spurious Casual Relationship



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False Criteria for Nomothetic Causality

- Research can determine some causes, but cannot determine complete causation.
- Exceptions do not disprove a causal relationship. **Probability principle**
- Causal relationships can be true even if they don't apply in a majority of cases.

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Necessary and Sufficient Causes

- Necessary cause - a condition that must be present for the effect to follow.
- Sufficient cause - condition that if present, guarantees the effect in question.
- Causes that are both necessary and sufficient are the most satisfying outcome in research.

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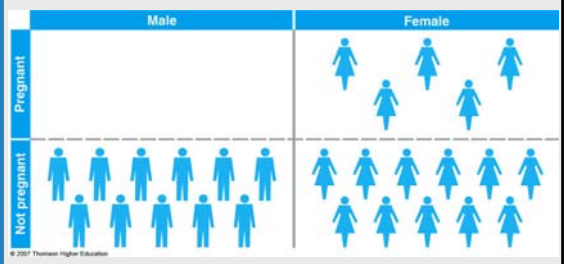
An Example of Necessary Cause



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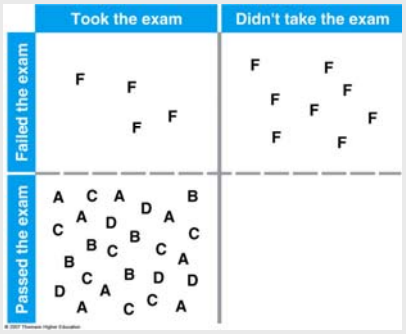
An Example of Sufficient Cause



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Units of Analysis

What or whom to study:

- Individuals
- Groups
- Organizations

Additional Key Terms

- Social artifacts - Any product of social beings or their behavior.

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Ecological Fallacy vs. Reductionism

- Ecological fallacy: erroneously basing conclusions about individuals solely on the observation of groups.
- Reductionism: attempting to explain a phenomenon in terms of limited and/or lower-order concepts.

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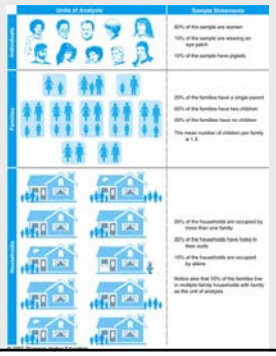
Illustration of Units of Analysis



Cross-sectional Studies

- Observations of a sample, or cross-section of a population or phenomena that are made at one point in time. (U.S. Census)

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Longitudinal Studies

- Permits observations of the same phenomenon over an extended period. (field-research projects)
  - Trend studies
  - Cohort studies
  - Panel studies

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Trend Studies

- A type of longitudinal study that examines change within a population over time. (comparison of U.S. Census over a period of decades)

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Cohort Studies

- Examines specific subpopulations, or cohorts, as they change over time.

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Panel Studies

- Examines the same set of people each time.
- Interview same sample of voters every month during an election campaign.

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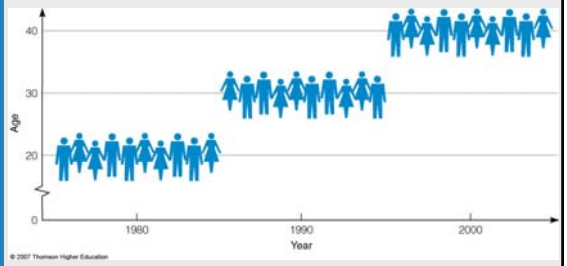
A Cohort Study Design



Cohort Study: Age and Political Liberalism

TABLE 4-1 Age and Political Liberalism

Survey Dates	1972 to 1974	1977 to 1980	1982 to 1984	1987 to 1989
Age of cohort	20–24	25–29	30–34	35–39
Percent who would let the Communist speak	72	68	73	73

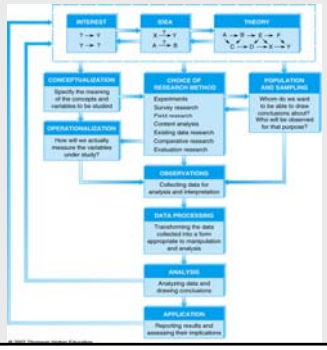
Comparing Longitudinal Studies

- Variable: religious affiliation.
  - A **trend** study might look at shifts in religious affiliations over time, as the Gallup Poll does.
  - A **cohort** study might follow religious affiliations among a specific generation.
  - A **panel** study could start with a sample of the whole population or a subset and study specific individuals over time.

How to Design a Research Project

1. Define the purpose of your project.
2. Specify exact meanings for the concepts you want to study.
3. Choose a research method.
4. Decide how to measure the results.
5. Decide whom or what to study.
6. Collect empirical data.
7. Process the data.
8. Analyze the data.
9. Report your findings.

The Research Process



Elements of a Research Proposal

- Problem or objective
- Literature review
- Subjects for study
- Measurement
- Data-Collection methods
- Analysis
- Schedule
- Budget
- Institutional Review Board