

# Chapter 1

## Human Inquiry and Science

# Ways of Knowing

- **Ordinary Human Inquiry**
  - Faith
  - Tradition
  - **Authority** (e.g. people seek knowledge by referring to individuals who are socially or politically defined as qualified producers of knowledge)

# Error and Confusion

- **Problems with Everyday 'Science'**
  - **Inaccurate Observations**
  - **Overgeneralization**
  - **Selective Observation**
  - **Illogical Reasoning**

# What are the essential features of a scientific viewpoint, then?

- Essential features? Methodology! (e.g. The reason we reject astrology as a science is not because of its subject, but because the methodology used is unscientific...)
- Rules and procedures to correct everyday-life-thinking is none other than methodology: “the science of finding out”
- Science depends on replication
- Procedures should be systematic



George observed a few preschool children at play and saw what he thought was a pattern in all preschool children's play behavior. He committed which one of the following error:

- A. Inaccurate observation
- B. Overgeneralization
- C. Selective observation
- D. Illogical reasoning

George has concluded that living in a strong and closed social network makes people more narrow-minded. While doing his research, he tends to focus on events and phenomena that fit that pattern. Which error?

- A. Inaccurate observation
- B. Overgeneralization
- C. Selective observation
- D. Illogical reasoning

# How to know the reality?

- Premodern View
- Modern View
- Postmodern View
- Science should be based on modern view?  
Some scholars criticize science predicated on modern view relies too much on positivism.

The following are short descriptions of different views of reality that have developed throughout history. Provide the correct response to each view (Matching, please).

A. Modern View

B. Pre-modern View

C. Post-modern View

1. Magic explains most of what goes on in the world

2. objects have independent existence

3. "reality" only exists because we agree that it does

# The Modern View assumed:

- A. People saw things as they were
- B. Science is inaccurate
- C. Diversity is an undesirable state
- D. Subjective relativism

The focus of social science does not include:

- A. Aggregates
- B. Attributes
- C. Variables
- D. Individual uniqueness
- E. None of the above

You observed that the President Bush defeated Al Gore in the previous election. This is a:

- A. Law
- B. Fact
- C. Theory
- D. Concept

Dr. Stets began her theorizing on delinquency by stating that kids like to be respected by other kids. She then goes on to develop testable relationships between delinquency and the density of their social networks. Her assumption that kids like to be respected is:

- A. Variable
- B. Hypothesis
- C. Proposition
- D. Axiom

Which one of the following is the best example of a hypothesis?

- A. Students do not like to study
- B. Conflict underlies every type of social relation
- C. Older people vote more conservatively than do the younger
- D. Strength of social ties can be measured by how often people call each other at emergency

# Babbie's Definition of a Theory

- A systematic explanation for the observations that relate to a particular aspect of life.

# Theory is based on:

- A. Fact
- B. Laws
- C. Concepts
- D. All of the above
- E. None of the above

# Three Functions of Theories

- They prevent our being taken in by flukes.
- They make sense of observed patterns in a way that can suggest other possibilities.
- They shape and direct research efforts, pointing toward likely discoveries through empirical observation.

# The purpose of theory is to:

- A. Undermine scientific debate
- B. Explain how and why things work
- C. Encourage a paradigm shift
- D. All of the above
- E. None of the above

# What are Variables?

- Logical groupings of attributes. (e.g. the variable gender is made up of the attributes male and female)

# What are relationships?

- A relation refers to a connection between two or more variables. When  $x$  is related to  $y$ , this means something is shared by both variables: covariation, correlation.
- Negative: go together in the opposite direction (e.g. the bigger sample size, the smaller sampling error)
- Positive: go together in the same direction (e.g. the bigger sample size, the bigger reliability)

# What do scientists mean when they say, $x$ causes $y$ ?

- Honestly, it is hard to prove the causation in even natural sciences. Why?
- The change of only  $x$  produces the change of  $y$ . All other things should stay put there: the problem of control! (researcher can be sure that all other possible factors do not affect the change of  $y$ )
- This is why experiments are very important in social and natural sciences.
- Correlation alone is not enough... Time order alone is not enough...

Are these two concepts related to theories? If yes, how are they related?

- Theory is again “a systematic explanation for observations that relate to a particular phenomenon.”
- Hypothesis, expressed in the form of a stated relation among variables, comes from theory.
- In sum, both variables and their relationships are nuts and bolts of every theory.

A researcher studying racial prejudice discovers in general that individuals with more fear of crime tend to be more racially prejudiced than individuals with less fear. Based on this information provided, the two variables in this example are:

- a. positively related
- b. negatively related
- c. not related
- d. both independent variables

A researcher interested in political participation hypothesizes simply that students who are more interested in politics are more likely to vote in local political elections. The independent variable in this example is:

- a. college students
- b. political elections
- c. student's interest in politics
- d. whether a student voted in a local political election
- e. level of educational attainment

If an attribute of a variable is 14 years of formal schooling, the variable is:

- A. Income
- B. Occupation
- C. Education
- D. TV watching

Which of the following is a variable?

- a. High school graduate
- b. \$48,000
- c. Age
- d. Female

Dr. Stets designs a study to investigate the factors that determine psychological disturbance. She theorizes that age, socioeconomic status, education, and gender are related factors for it. In her study the independent variable(s) is (are),

- A. Under age youth
- B. Education
- C. Female
- D. Both b & c

In the study describe above, the dependent variable(s) are:

- A. Education
- B. Age
- C. gender and socioeconomic status
- D. Psychological disturbance

If female is an attribute, what would be the variable?

A. income

B. gender

C. role

D. male

# Types of Explanations

- **Idiographic**
  - Exhaustive
  - Detailed
  - One case
- **Nomothetic**
  - General
  - Abstract
  - Many cases

The choice of an idiographic or a nomothetic approach to a scientific study depends on:

- A. the goals of your study
- B. the paradigm you choose to work within
- C. the measurements you make in your study
- D. the significance of your study

# Idiographic explanations are:

- A. Unique
- B. General
- C. Abstract
- D. Superficial

A major difference between nomothetic explanations and idiographic ones is that nomothetic explanations:

- a. tend to generate exhaustive rather than an partial explanations.
- b. usually involve the study of many cases.
- c. tend to result in specific explanations.
- d. frequently result in explanations that are more detailed and in-depth than idiographic ones.

# Types of Data

- **Quantitative**

- NUMERICAL
- EASIER TO SUMMARIZE
- EASIER TO COMPARE
- ABSTRACT;
- DETAILS LOST

- **Qualitative**

- NOT SUBJECT TO NUMERICAL SUMMARY
- RICHER, MORE DETAILED
- HARDER TO COMPARE

# What implications does the type of data have for scientific research?

Which is better? Which is more appropriate?

There is no right answer, actually.

- What is the nature of the phenomena, or entities, or social reality? (Ontological)
- What might represent knowledge or evidence of the entities or social reality? (Epistemological)

# E.g. class consciousness: how to measure?

\*\* Quantitative approach: you ask questions (e.g. one of reasons for poverty is that capitalists with private property exploit workers...) However, survey assumes respondents already have an opinion to that question. What if they have never thought about it, or they see it in the different way, unlike researcher's expectation? Additionally, it is more interested in static and fixed opinions. Decontextualized as well.

# Continued...

\*\* Qualitative approach: you might want to observe collective, (survey is basically interested in individuals), more dynamic flow of manifestation of class consciousness. (e.g. participating in workplaces to observe worker's responses to plant closings) You can understand their interactions and cultural expression of lived experiences in a context.

# Quantitative data are:

- A. Numerical
- B. Harder to compare
- C. Very detailed
- D. Harder to summarize
- E. None of the above

The distinction between quantitative and qualitative data in social research is essentially the distinction between:

- A. Philosophy and Religion
- B. Good data and less good data
- C. Numerical and non-numerical data
- D. Useful data and less useful data
- E. Static data and dynamic data

# Theory Building

- **INDUCTIVE**

- START FROM DATA
- ABSTRACT PRINCIPLES UP
- ARRIVE AT GENERAL THEORY

- **DEDUCTIVE**

- START FROM THEORY
- APPLY LOGIC
- ARRIVE AT SPECIFIC PREDICTION

# The inductive model ends with:

- A. Theory
- B. Observation
- C. Operationalization
- D. Analysis